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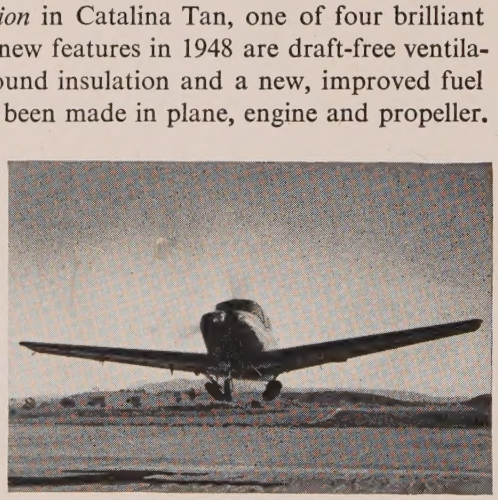
BIGGER, MORE USEFUL, SAFE, FAST AND RUGGE

HERE'S THE BEAUTIFUL new 1948 *Ryan Navion* in Catalina Tan, one of four brilliant enamel colors now available. Among other new features in 1948 are draft-free ventilation, improved interior styling, perfected sound insulation and a new, improved fuel system. Many mechanical refinements have been made in plane, engine and propeller.

PLENTY OF LEG AND ELBOW ROOM for 4 passengers and their baggage in the *Ryan Navion*. Seats are removable to hold 645 lbs. of cargo in 55 cubic feet, easily loaded by removing canopy. Leg room is 50 inches in front and 40 inches in back. Elbow room is 42 inches, and baggage compartment holds up to 180 pounds in 20 cubic feet of space.



IN AND OUT OF SMALL FIELDS with the greatest of ease! You never believe how easy it is to fly this big, fast plane until you actually try it yourself. For illustrated booklet and a free trip in the *Ryan Navion*, write us on your business letterhead. We'll have our nearest dealer put a *Navion* at your disposal for a business or pleasure trip.

NAVION LOGICA NEXT STEP FOR 2-PLACE OWNER

Actually much easier to fly than mar 2-place planes, the new 1948 *Rya Navion* is the ideal next step for th small plane owner who recognize the need for top cross-country perfo mance and real business-plane utilit

The 1948 *Ryan Navion* has not sa rificed ease of flying in order to obtai its 150-mph speed or its roomy 4-pa senger comfort. Its interconnecte ailerons and rudder give an option coordinated two-control system, a suring stability and relaxed flying eve in rough air. Unique all-around vi bility makes every maneuver...in th air and on the ground...easier...safe

The *Ryan Navion* is designed to "g places" *fast* and to land you where business or pleasure requires. Hydra lic flaps, sturdy tricycle landing ge with oversized wheels and tires, ar the large steerable nosewheel, assu efficient operation from short, roug fields, even in strong cross winds. Th powerful 185 hp engine gives the *Rya Navion* a climbing rate of 830 feet minute, and normal range of 500 mil The new optional auxiliary tank giv it a maximum range of 750 miles.

Safety and dependability are bu into the *Ryan Navion*; its thick-skinne all-metal ruggedness means not on extra strength but permanent beau and ease of maintenance.

Owners seeking the best will fin that the new 1948 *Ryan Navion* h blended together all the character tics most desired in 4-place planes, r unbalanced extremes in performan have been sought at the sacrifice other important qualities.

The Thoroughly Proven Post-War Plane *Ryan Navion*

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State_____ Birth date_____

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The Birdmen's Perch

By *Major Al Williams*, ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.

Remember the average airline pilot we told you about a few months ago?

We gave you his height, weight, hours, and everything but the color of the mole on his back.

Well, now we can tell you about the average flying farmer, of which 558 are represented in the following figures:

He's 36 years old, or a little older than the usual pilot. He has about 439 hours and has been flying about 29 months; so, you see, he's not a novice.

His plane really works for its feed. He gets much more utility out of it than the big-city boys, using it for everything from fence-riding to shopping trips.

And we're pretty sure that a cookie as smart as this demands the same high quality in his aviation petroleum products (meaning Gulf Aviation Products) as he does in his farm petroleum products (meaning Gulf Farm Aids)!

WHAT AND WHY

Once upon a time, people were so impressed by the fact that airplanes *flew* that they didn't notice much else about them.

Today, these same people are much more interested in *what* an airplane does *when* it flies. They're interested in how much utility they can get out of it; in how much more work they can get done with one; in how soon it will pay for itself.

Same thing with oils.

There was probably a time when people were so impressed by the fact that oil lubricated that they didn't notice much else about it.

Today, they're darn curious to know *what* the oil does when it lubricates. They're interested in *how much* metal-to-metal-wear prevention they get out of it; in *how much* more actual lubrication they get with a given brand of oil; in how quickly a premium oil like Gulfpride repays its initial cost.

That's why we keep telling you about the Alchlor Process, the extra refining step that removes an extra 15% of non-lubricating impurities from an already refined oil . . . to make Gulfpride Oil.

Because once you try Gulfpride in your own engine, you'll have a fistful of proof that it lubricates *better* and *longer* and *cheaper!*

NO NAME DEPT.

The mail is about 50-50.

Half the letters say keep the Little Known Facts Dept., the other half want Pet Pilot Peeves or Favorite Flying Gripes. Most of the original suggestions, such as "Service Hints For Maintenance Shops," would be more interesting to the lad who suggested them than to the whole gang of Perch Pilots.

You'll just have to keep up the requests until we get a better idea of what you want, gents.

Meanwhile, will you skyrockets who are holding out for the Peeves or Gripes Depts. start sending your Pet Peeves in?

Can't be a Pet Peeves Dept. without Pet Peeves, can there?

Unload all your flying hates (address above) and you'll feel considerably relieved at having gotten them off your chest. And so will we at having gotten some more material for the Perch.

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GULF **GULF AVIATION PRODUCTS**

WHEN YOU SWING THE PROP AND SHE STARTS "SOFT" WITH WEAK COMBUSTION
PLUS BLACK EXHAUST SMOKE —IT GENERALLY MEANS THAT YOU'RE OVERPRIMED.
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FER THE LUVVA MIKE, STOP WASTING THAT···
GOOD GULF AVIATION GASOLINE!
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SKYWAYS

Due to conditions beyond our control, a temporary change has had to be made in SKYWAYS' style and type. As soon as the emergency is over, SKYWAYS will again return to its quality presentation.

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One-Way Mission ..... Col. F. X. Purcell, Jr. 17
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JUNE 1948 VOLUME 7, NUMBER 6

The Henry Publishing Company publishes SKYWAYS at 444 Madison Avenue, New York 22, New York. Advertising Offices: 444 Madison Avenue, New York 22, N. Y.; 6 N. Michigan Ave. Chicago 2, Ill.; 816 W. 5th Street, Los Angeles 13, Calif. Edward A. Dawson, Eastern Manager. Gordon Simpson, West Coast Manager. James L. Cunningham, Chicago Manager.

The following publications are combined with SKYWAYS: Air News and Flying Sportsman.

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Spanish Edition: Adolfo Guido Lavalle, Editor-Director, Suipacha 419, Buenos Aires, Argentina.

AIRviews

"Very definitely, it is not an exaggeration to state that our company believes that air freight can revolutionize merchandising."

This statement is taken from the testimony of the General Traffic Manager of a large mail-order firm given before the Civil Aeronautics Board.

It comes as the result of proved success in using air freight to save costs on interest-in-transit, inventory-in-transit, swifter turnover of stocks, and the value of being first in a community with newest products and styles.

Here at Douglas we also believe in the growing future of air freight. And we are working with the air carriers and the shippers to lower air freight costs and to step up efficiency of operations.

Right now we are working on a freight version of the huge Douglas DC-6. This giant plane will, for example, carry up to 30,000 lbs. of payload. It will cut to 8 hours the flying time between New York and Los Angeles. New methods of handling and stowing cargo aboard the DC-6 also will be tested with individual air carriers.

Until the DC-6 enters service, freight versions of the Douglas DC-4 and DC-3 continue to carry the bulk of all air freight throughout the world.

Donald W. Douglas

PRESIDENT
DOUGLAS AIRCRAFT COMPANY, INC.
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At California Flyers you learn aviation mechanics in the midst of the world's greatest concentration of aviation activity. Nearby or within a few miles are such famed aircraft plants as Douglas, Lockheed, North American, Hughes and Consolidated Vultee. Adjacent to the school is the renowned Los Angeles Municipal Airport, western terminus of most of our major airlines—United, Western, Pan American, TWA and American. What's more, ten percent of America's private plane owners live in California, 556 airports dot the countryside and 8,500 private aircraft are able to fly virtually every day of the year in clear, sunny skies.

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AIR YOUR VIEWS

QUERIES?

Gentlemen:

In your March issue you stated that the P-81 "is the first Air Force plane to fly with a gas-turbine engine designed for prop-drive."

Don't they consider the Navy a part of the Air Force? I believe the Navy has a plane, designated XF2R, that is powered by a gas-turbine designed for prop, and a separate jet in the tail.

C.H. Mayer

Rapid City, S. Dak.

At this time Naval Aviation is separate and distinct from the Air Force. The Navy does have a plane powered by gas-turbine designed for prop, but it is still an experimental undertaking. The plane was designed and built by Ryan and is called the Darkshark Fireball.--Ed.

Gentlemen:

I want to buy an airplane just for pleasure...mostly fishing, in fact. Here is a list of possibilities: Ercoupe, Swift 125, Piper Cruiser, Luscombe 85, Funk, Cessna 120, Callair or Stinson.

My income is a little better than average; I own a farm, and am a Civil Engineer for soil conservation in Saline County (Neb.).

My hobby is fishing and those good fishing holes are from 400 to 500 miles away...quite a trip in a car. I would like a ship that lands slowly, has a lot of stability at low speeds and is as safe as possible. I want to get a ship that an average income warrants, that will carry two people and their gear. Perhaps I could even use the plane in connection with my surveying work.

Some landings would be in short, rough fields, and the gear for that surveying work weigh about 8 pounds.

Another question is maintenance ...would an all-metal or fabric ship be best? Of course, I'd build a hangar for my plane.

I want a plane with a good landing gear, at least 100 mphs or better cruising speed and a range of 500 miles or better.

Could you give me some ideas as to which plane would suit my needs best? Could you boil down the list I gave you to about two or three ships... and then discuss them with me? I don't want to buy a ship until I'm certain it answers all my requirements... and I'd like advice from people that have flown them.

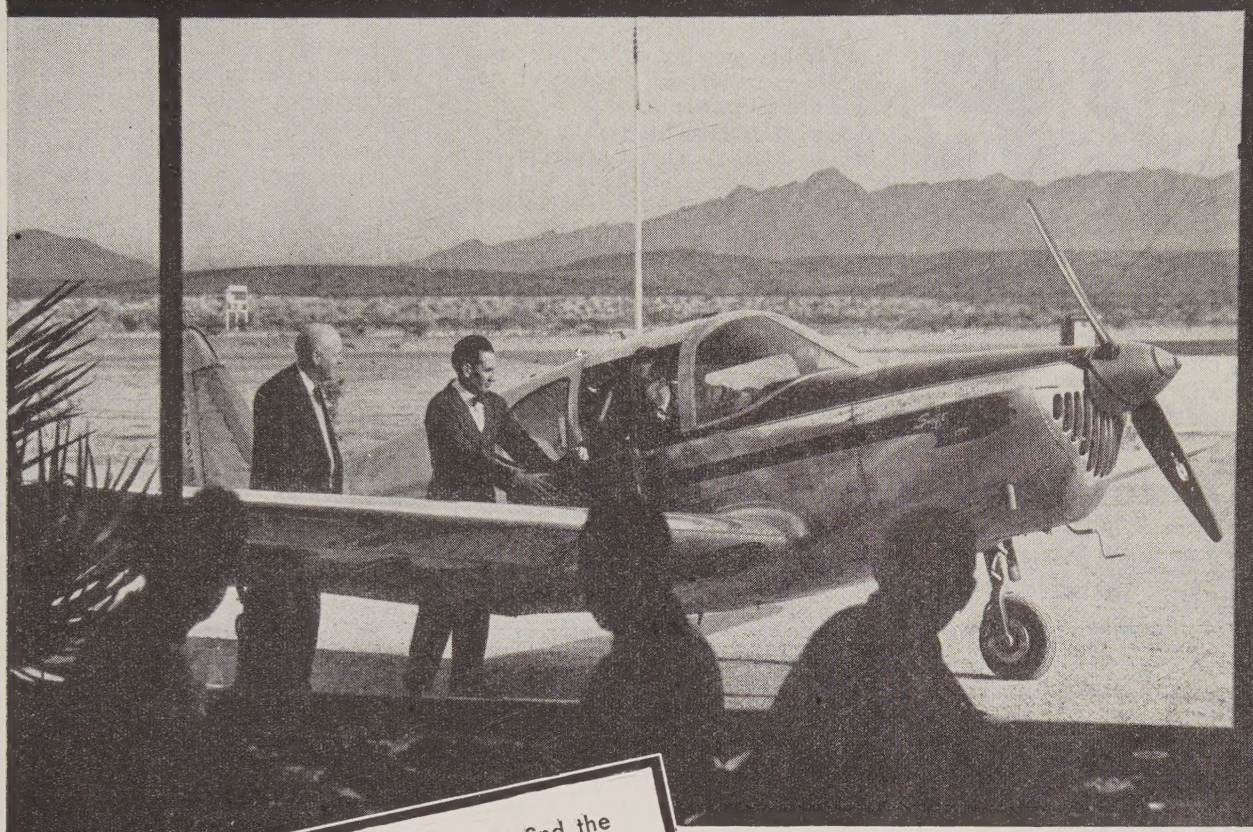
A.M. Stech

Friend, Nebraska

Okay, pilots, you fellows who have flown them all and can honestly compare performance, etc., here's a chance to help a fellow flyer out with some good sound advice. Consider Mr. Stech's requirements, weigh your experience with the aircraft he mentions... and write to Mr. Stech in care of SKYWAYS.. We'll mail him your letters.--Ed.

Swift 125 PAYS ITS OWN WAY

with Big Plane Utility . . . Light Plane Economy



FOR BUSINESS OR PLEASURE, you'll find the Swift 125 practical for fast, safe, comfortable flying. Even though you're a newly licensed pilot, the Swift 125 is easy to fly. You'll get real pleasure out of the extra power and speed of the 125 h.p. Continental engine . . . you'll fall in love with the smooth control response and stability of the modern low-wing design. You'll like the economy of operation and upkeep of this all-metal plane. Your nearby Swift Dealer invites you to fly the Swift 125. Compare it with any other plane under $6,000 . . . chances are, you'll choose the Swift.

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Metal Top Canopy—Shades cabin from direct rays of sun. Hinges up and locks for easy entrance and exit. Now standard equipment on all models of the Swift 125.

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New Cabin Window improves appearance, gives side visibility. Flat shelf behind seat for hats, log books.

SWIFT 125 SCORES *HIGH* WITH MORE UTILITY FOR LESS COST!

FEATURE	Swift 125 $3,495	Planes A $7-8,000	Planes B $5-6,000	Planes C $3-4,000
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LOW-WING DESIGN	YES	YES	NO	NO
RETRACTABLE LANDING GEAR	YES	YES	NO	NO
HYDRAULIC FLAPS	YES	YES	YES	NO
HYDRAULIC SHOCK ABSORBERS	YES	YES	NO	NO
STEERABLE TAIL WHEEL	YES	YES	YES	NO
SELF-STARTER AND GENERATOR	YES	YES	YES	NO
AUTOMATIC PITCH PROPELLER	YES	YES	YES	NO
125 HP. ENGINE, plus	YES	YES	YES	NO
140 M.P.H. CRUISING SPEED, plus	YES	YES	NO	NO
48 M.P.H. LANDING SPEED, minus	YES	NO	YES	YES
1,000 F.P.M. RATE OF CLIMB	YES	NO	NO	NO
425 MILE RANGE, plus	YES	YES	YES	NO
SCORE	ALL	11	7	1

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Swift 125

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For the free catalogue or further information write:

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MILITARY AVIATION

IN 1917 the U.S. Air Force introduced to an unimpressed world a torpedo-shaped contraption with two wings, a propeller and four wire-spoked wheels. It was called a "controllable robot bomb" and the airmen who invented it boasted that it could hit a target (diameter not specified at 90 miles. It was propelled by a 38-hp engine and was controlled" by a system of gyroscopes and pneumatic valves.

Today, 31 years and several thousand experiments later, the guided missile program is reaching a dramatic climax. Until this moment there have been few missiles guided as much by science as by prayer. After the first crude attempt of 1917, the experiments were abandoned for the most part by the Air force until 1940 when it became agonizingly evident that Germany had picked up our lead and was now far ahead of us with V-1 and V-2 experiments at Peenemunde and elsewhere.

Our attempt then to regain our lost position was hurried and unscientific. Without exception, the missiles that were developed during the war—the GB-1, the *Azon, Razon,* etc. — were little more than attempts to give some sort of directional English to already existing weapons. The attempts at best were unrefined. Never were we able to produce a weapon with the range and accuracy of the V-1 or V-2.

With VE-day we decided to chuck our wartime "expedient" missiles and start all over from scratch, retaining only so much of the knowledge we had gained since 1940 as would serve as a guide as to what not to do. It is from this delayed "third start" that a new string of truly guided missiles—wholly different from anything yet unveiled —is now being readied for test firing. USAF officials will not, of course, disclose range or accuracy expectations, but while they deplore wild and idle prophecy, they admit they have great expectations. One of the manufacturers of one of the missiles, less reticent than the men in uniform, has already described the performance of the missile he is building as "most uncanny." It is, in his words, possible now to pinpoint a battleship half way across the ocean with a missile fired from our own mainland.

SUPER CARRIERS

Under a "cross my heart and hope to die" oath of secrecy, the Navy has recently let a few "key" people in Washington take a fast peek at preliminary sketches of its new 80,000-ton strategic aircraft carrier. When and if it is completed, it will be roughly twice the tonnage of the three largest carriers now afloat—the *Roosevelt,* the *Midway* and the *Coral Sea.* It will differ from conventional carriers in that its flight deck will not be obstructed by the usual "island" to one side. It will be a real *flat* top.

As mammoth as the big ship is, however, it is puny compared to the quarrel it is fomenting behind the scenes between Navy and Air Force strategists. Latest charges by the Air Force, which strongly resents Naval encroachment into the strategic air picture, is that it would cost nearly two billion dollars to build the carrier and support it with the necessary battleship, cruiser and submarine auxiliaries. Further, say the air generals, even with all the auxiliary protection that could be amassed, the big boy could never get within operating radius without becoming as vulnerable as a duck in a bathtub to enemy land base airplanes.

The Navy's answer is that the two billion figure is fantastic since the auxiliaries are already in existance and would therefore create no additional expense. The admirals laughingly pooh-pooh the vulnerability charge.

Bitter as the argument has become, there is a faint possibility that a compromise agreement can be reached wherein the Navy will be allowed to have its ship, but the Air Force will be given command of the air units it carries—in somewhat the manner of the Jimmy Doolittle B-25 Tokyo mission.

XP-87 MODIFICATION

As yet it has not been officially confirmed, but it is quite likely that the production model of Curtiss-Wright's massive jet fighter, the XP-87, will have two engines instead of the four 24C Westinghouse plants now in use in the experimental model. The switch will reduce the frontal area of the engine nacelle and will also minimize the parts problem. If, as is expected, heavier engines are used, the plane's 3,000 pound thrust will also be measurably increased.

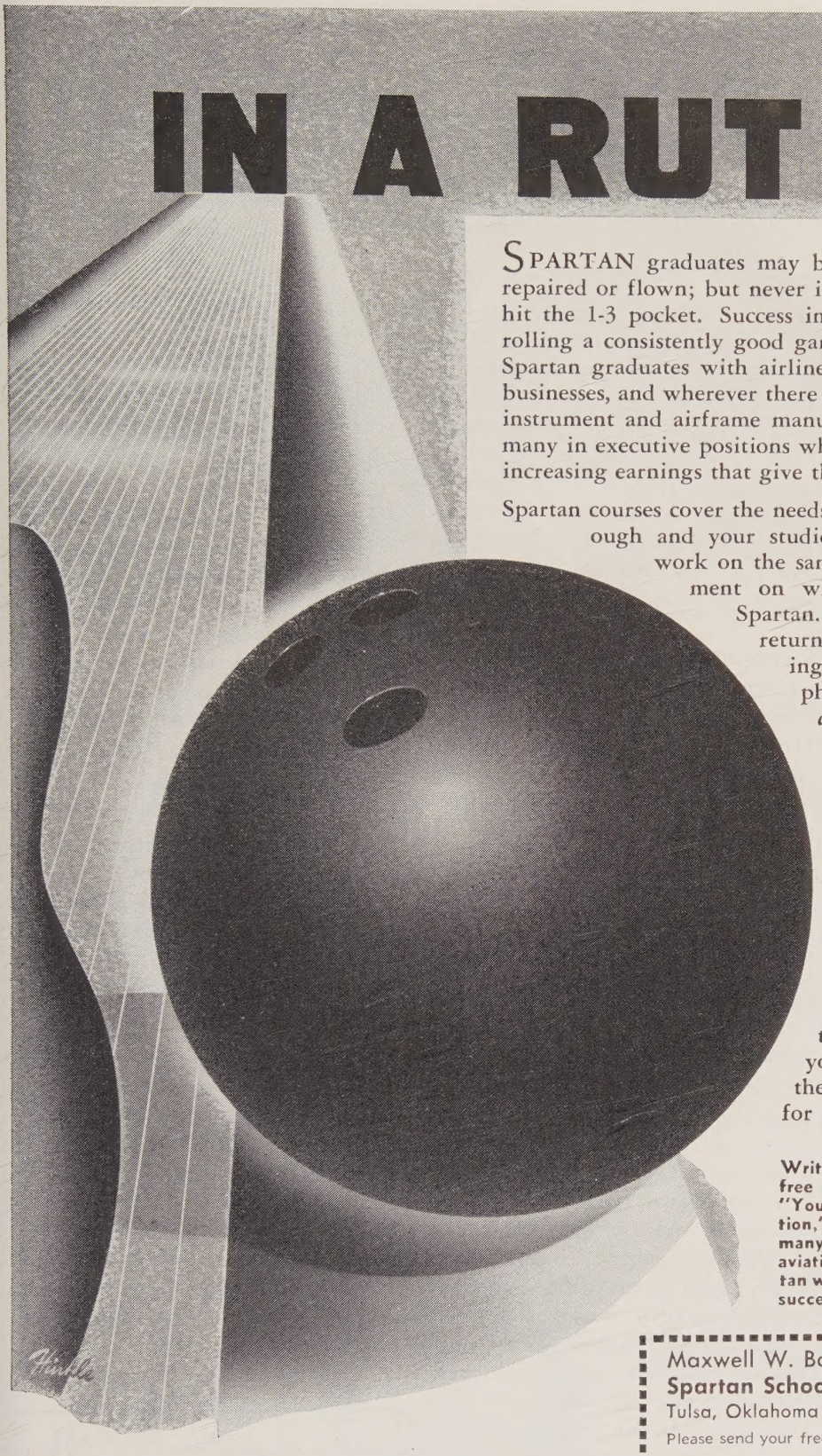
REVERSED DECISION

The Deputy Chiefs of Staff of the U. S. Air Force recently completed a comprehensive study of the reports of the President's Air Policy Commission and of the Congressional Aviation Policy Board. Their findings, done up tidily in a pink folder and stamped confidential, have now been submitted to the Commanding General.

Among other conclusions, the Deputies determined that it was entirely feasible to award limited maintenance and overhaul contracts to civilian agencies such as Pacific and Southwest Airmotive. The two Policy boards had recommended such action so that a reservoir of civilian personnel, trained in the maintenance of the newest type of equipment, would be ready instantly in event of an emergency. Until now, however, the Air Force had opposed such a move, contending that it needed all its time and money to train its own personnel. Two months ago this column strongly urged the Air Force to take immediate action as recommended by the two boards. It is heartening to see that at least the first step in this direction has now been taken. It will not be enough, though, to admit the feasibility of the proposal. It must be followed as quickly as possible by the actual letting of contracts. Delay might easily result in the financial collapse of one of aviation's most vital subsidiary components.

C. E. R.

IN A RUT ?



SPARTAN graduates may be found wherever planes are made, repaired or flown; but never in a rut. They are trained to win, to hit the 1-3 pocket. Success in aviation — like bowling — requires rolling a consistently good game. That's why you'll find so many Spartan graduates with airlines, in weather stations, in their own businesses, and wherever there is aviation work to be done. Engine, instrument and airframe manufacturers employ Spartan graduates, many in executive positions where they enjoy security, prestige and increasing earnings that give the finer things in life.

Spartan courses cover the needs of modern aviation. They are thorough and your studies are backed up with actual shop work on the same type of "live" aircraft and equipment on which you will work after leaving Spartan. Many former Spartan students have returned to complete their interrupted training or to acquire knowledge of other phases of aviation. *No school can receive a more sincere compliment.*

Spartan now offers seaplane training and will soon have jet turbine familiarization. New courses are added whenever there is need for well-trained men in a new phase of aviation.

Train for a job in aviation that will give you pride of daily achievement and association with people who are "going places and doing things." But don't put it off. While you are debating if you should take the step, some other fellow is training for the job you want.

Write today for the new, free 40-page catalog, "Your Career in Aviation," that explains the many opportunities in aviation and how Spartan will help you achieve success.

Maxwell W. Balfour, Director
Spartan School of Aeronautics Dept. S-68
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Extra strong—extra tough — these husky 6-point power sockets are designed for those jobs where you literally need "more sock." All owners of 3/8" and 1/2" drive socket wrench sets should own a complete set of these heavy-duty sockets to supplement their thin-walled 12-point sockets. Purchase of these huskies is a sound investment because it enables a mechanic to handle many tough jobs for which regular sockets are too light.

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PROP WASH

Aero Oddities

CROSSED UP. Student pilot on his second solo hop came in too fast for landing, slammed on brakes and ship nosed over. Field officials and ambulance rushed out to find pilot unhurt, but hanging upside down in seat belt. Student called out he was okay, then unfastened seat belt, fell and broke his leg. (A. Hooper, Monmouth, Ill.)

SECOND SIGHT. Youthful pilot on a cross-country between Lynchburg and Roanoke, Virginia, noticed it was getting dark, decided he could not make Roanoke before nightfall, so made his approach to small airport this side of Roanoke. On way down, he pulled off his dark glasses, discovered darkness was due to them, and had plenty of time to make destination before sundown. (W.B. Bullock, Baltimore, Md.)

BOTTOMS UP. V.A. Blair, Roosevelt, Utah, businessman, chartered airplane for a business trip. As the ship's wheels left ground on take-off, a gust of wind tossed plane into snow drift alongside runway. Blair and pilot climbed out unhurt. Hour later Blair signed another pilot and plane for trip. You guessed it ...gust flipped second plane over on take-off, so businessman cancelled trip. (B. Halliday, Salt Lake City, Utah)

NO TAKER. The sum of $200,000 was offered to aeronauts to put on a flight demonstration at an altitude of at least 1,000 feet. Two men declined stating that while their plane would undoubtedly go to that altitude, the sum of money did not counterbalance fact that the flyers had never attempted flight at 1,000 feet before. Two flyers were Wright brothers, money was offered by French Government in 1907. (Wm. Hallstead, Dalton, Pa.)

ABOUT FACE. Enroute from San Francisco to Los Angeles in Cessna 140, a pilot closed his eyes for what he thought would be a few minutes. Suddenly aroused, pilot checked instruments, check points and found ocean was on his left. He was headed back to San Francisco. (Mrs. M. Green, Los Angeles, Calif.)

TAXI RECORD. Caught by darkness, a student pilot in PT-17 made a forced landing, damaging both wings. Local A&E took wings off ship, taxied it back to the field on the highway, a distance of 55 miles! (W. Knox, Lelia, Texas)

BRONCO B-26. Making the turn off base leg onto final approach at an altitude of 800 ft., a B-26 flipped over on its back. Pilot gunned engines, completed roll, regained control and made normal landing without having to go 'round again. (J. Siegling, Cheyenne, Wyoming)

Att'n Readers:

If you have any news note oddities pertaining to aviation, send them to SKYWAYS, Box, 17, 444 Madison Avenue, New York 22, N. Y. Five dollars will be paid the sender of each "oddity" printed. Contributions cannot be returned unless accompanied by stamped addressed envelope. The decision of the editors is final.

Here's why so many business men are buying and flying

America's No. 1 Utility Plane

MANY a middle-aged business man has told us, "I'm too old to learn how to fly"—only to find himself, flying on his own, soloing a Stinson, after about 10 hours' easy flying time!

That's not hard to understand. Almost anyone who can drive a car can learn to fly the new spin-resistant Stinson, quickly, easily and safely. This is just one of the reasons why Stinson has become America's biggest-selling 4-place personal plane—especially with "over-40" owners who use it for year-round business *and* pleasure.

Stinson *utility* counts even *more* with these practical people. It carries 4 people and 100 pounds of luggage...or the pilot alone plus 640 cargo-pounds.

It's truly a "fly-anywhere" plane, too, with quick take-offs and slow landings. Cruising speed: 130 m.p.h. at 5,000 feet. Non-stop flying range, 554 miles.

See your Stinson dealer, today, for a demonstration flight!

For literature, write Stinson Division, Dept. C, Consolidated Vultee Aircraft Corp., Wayne, Michigan.

Stinson

For 22 years, builder of
America's most *USEFUL* personal planes

He makes his Stinson work for a living!

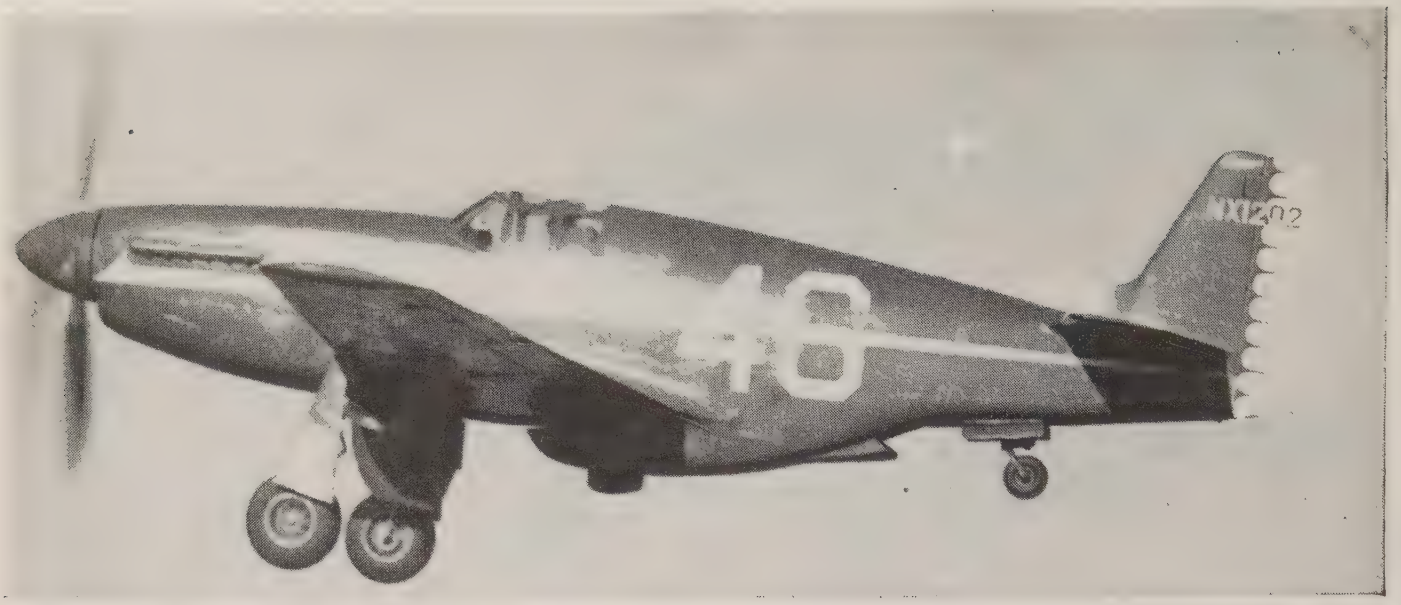
1. "I learned to fly at 47," says manufacturer Howard M. Smith of Holly, Michigan. "Now I use my Stinson constantly, to contact customers in every part of a 400-mile area."

2. "One rush delivery of the small springs we manufacture kept a customer's plant from closing down, and resulted in doubling our business with that firm," he adds. "That one flight alone more than paid the cost of my plane."

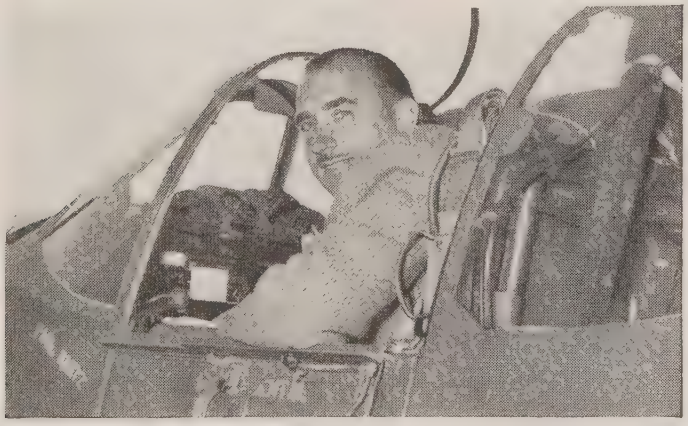
3. "I have more time with my family, too," Mr. Smith concludes. "The four of us take many pleasant trips in the Stinson. We feel it's safer than traveling by highway. There's nothing like a Stinson for fast, comfortable family travel!"

FREE FLIGHT INSTRUCTION

If you are a business or professional man interested in learning to fly, we invite you to inquire about your Stinson dealer's free flight instruction plan. Write W. H. Klenke, General Sales Manager, Stinson, Wayne, Mich. No obligation.



RACE WINNER—This photo of Paul Mantz' P-51 was made as he took off from California for the 1947 Bendix Race



"MR. AVIATION" is what Hollywood calls Flyer Mantz, for in addition to racing, he flies for the movies and charter hops the stars to and from West Coast resorts

Ace Racer

PAUL MANTZ

By DON DOWNIE

MANTZ broke into movie stunt flying when all other pilots refused to hop plane through an open hangar

THEY say that everyone in Hollywood is a screwball. Everyone, that is, except Paul Mantz.

Paul Mantz is "Mr. Aviation" so far as the Hollywood motion picture industry is concerned. From his 500-plane air force, 7th largest in the world, he furnishes more aircraft for studio work than all other operators combined. Planes with the Mantz insignia do formation acrobatics, fly through open hangars or crash before the cameras—whichever is called for by the script. Mantz planes ferry exposed film from isolated location sites to studio processing labs with the day's "rushes" and then fly high-salaried stars and directors back from the hinterlands after location scenes are completed.

"Whatever the type of flying, we do it," said Mantz as he leaned back in his office chair and lit a fresh cigar. Even the most color-blind visitor could see that his reputation for brilliant ties and loud sports coats is not understatement. He looked much more like a successful stock broker than an aviator.

His office walls at the Lockheed Air Terminal are lined from floor to ceiling with autographed pictures of stars, directors and race pilots. Crash scenes, formation flying and special stunt set-ups from long-forgotten motion pictures mingle with photos of world-renowned racing craft . . . and the telephone in his office rings incessantly.

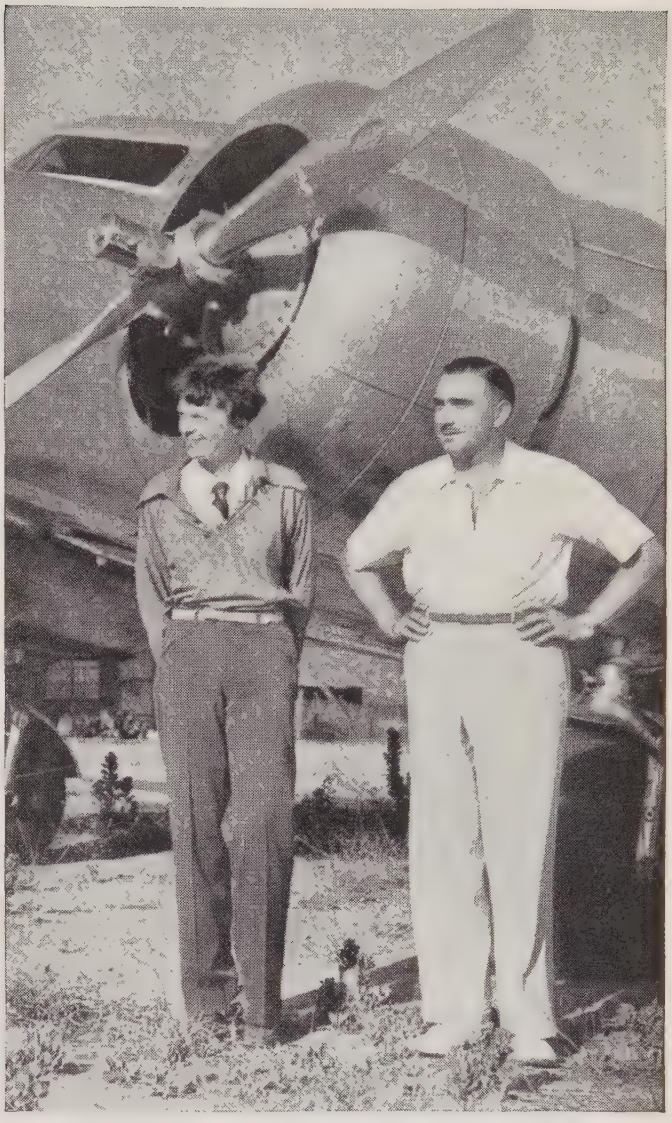
In a town noted for its masters of publicity, Mantz plays no second fiddle. His clipping books are stuffed with stories of new speed records, honeymoon flights, mercy trips and aerial deliveries of emergency equipment.

When a wealthy guest at the Los Angeles Ambassador Hotel entrained for New York without her jewelry, a Mantz plane flew the valuables to the nearest whistle-stop were a detective delivered the gems to the absent-minded tourist. The insurance company paid the bill.

When a fishing boat breaks down in California waters, a Mantz plane frequently drops much-needed small parts wrapped in burlap and cork attached to a parachute. Should the boat be near a beach, the parts are usually landed on the sand near the surf and a skiff picks them up.

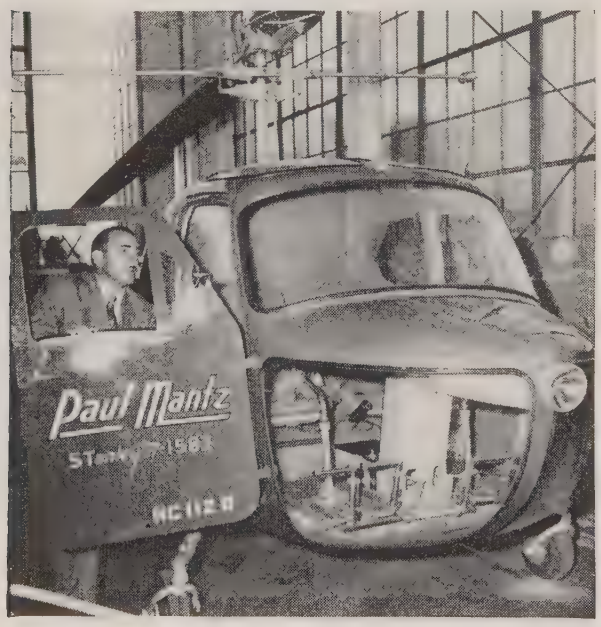
When a deep-sea diver was stricken with the bends, Mantz himself flew him 220 miles from Santa Maria to the Navy decompression chamber in San Francisco, and never went higher than 50 feet above the ground!

When Christian R. Holmes, Santa Barbara multimillionaire, developed a terrific urge to get home in a hurry from a South American cruise, he wired Mantz to meet him in Balboa, Panama, and fly him home. The flight to Palm Springs in a Lockheed *Orion* was the longest charter trip in aviation; 3,600 miles in 21 hours and 40 minutes, for a new world's record in 1934. *(Continued on next page)*



FRIENDS for years, Paul Mantz did lot of flying with Amelia Earhart *(above)*, led one of searches for her after ill-fated South Pacific trip, which he advised against. Proud moment of Mantz' career came when his daughter Tenita *(below)* soloed. With them is Chief Pilot Stan Reaver

MANTZ AIR SERVICE "bone yard" at Burbank, Calif., includes many old and pretty well beat-up World War I planes, but they are still reparable and will fly in future films. Helicopter *(below)* is new addition to fleet



RAIN MAKING is another Mantz experiment. B-25 *(below)* is being equipped with hoppers to hold dry ice

He even has an air freight contract with 178 Southland morticians.

In the lean years of aviation's growth, Paul Mantz built up a name for himself among cinema stars with his "Honeymoon Specials." Whenever a Hollywood big-name wanted to get married in a hurry (California has a three-day cooling off period between marriage license and ceremony), a call would go out for Paul Mantz.

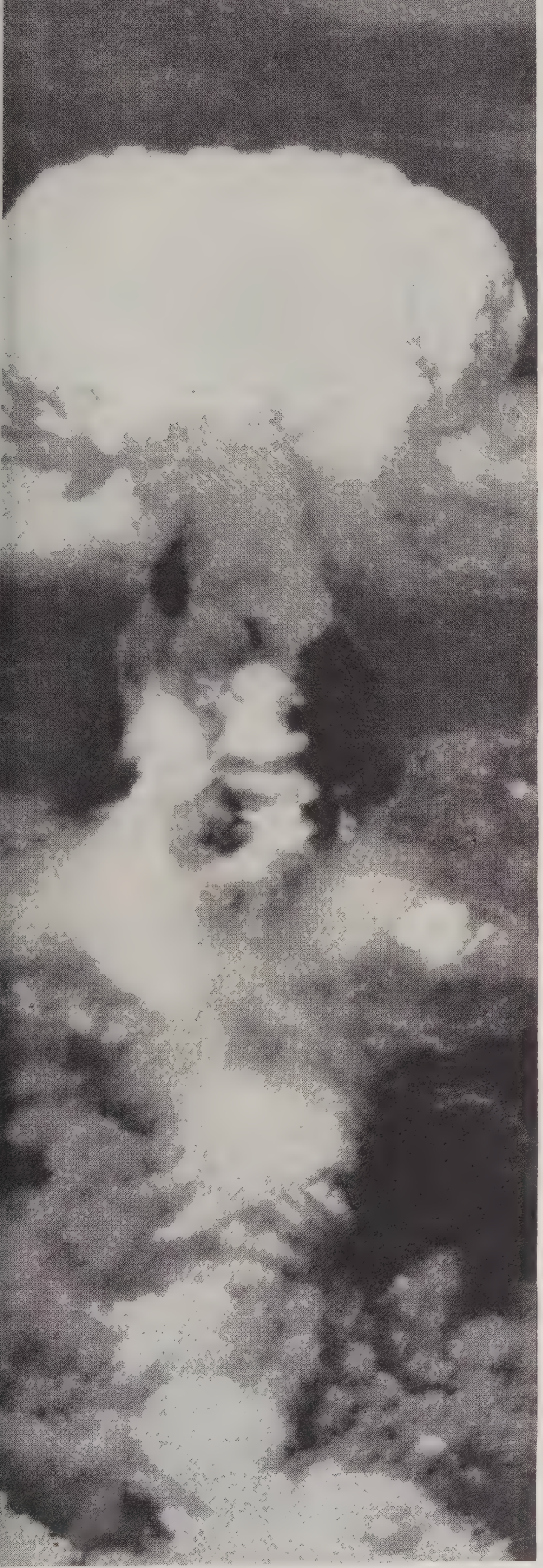
"Ninety percent of these calls were after midnight," said Mantz with a gleam in his eye. "The successful suitor on the other end of the phone usually said, 'I want to get married tonight. Can you fly me out of the state?'

" 'Sure,' I'd reply. I had a special overnight bag already packed, and I'd meet the couple at the airport within 30 minutes. An hour after the call, we'd be well on our way to Las Vegas or Yuma."

PHOTOS of the airman's many friends—movie stars, execs and flyers—line office, while trophies surround him

Names of the couples that Mantz has flown to the altar read like a "Who's Who in Hollywood." Lana Turner and Artie Shaw, Alice Fay and Phil Harris, Lupe Velez and Johnnie Weissmuller, Ann Dvorak and Leslie Fenton, Brenda Marshall and Bill Holden and the late Jean Harlow and cameraman Hal Rosson; all took the high road to matrimony with Mantz.

When Carole Landis married Willis Hunt, one of Mantz' pilots took off with the couple for Las Vegas, Nevada. A few minutes later, Miss Landis' mother drove up to the field and breathlessly demanded that Mantz "follow that plane." Much like the "chase" sequences in Western cowboy films, Mantz took off in hot pursuit. He could not overtake the eloping couple until they landed at the Las Vegas Airport, but the wedding was called off and the couple return — *(Continued on Page 42)*



REPORT on atomic bomb attack on Japan, 1945, indicates that even 100 planes with atom bombs could not assure a quick victory, though damage would be great

ONE-WAY COMBAT means ability to carry greater bomb load a longer distance. Airmen would bail out of planes and then be returned to base by rescue squads

One-Way Mission

By Col. F. X. PURCELL, JR., USAF

WHETHER American boys must fight the next war as Kamikazes is a question that is worrying the USAF. Long considered oriental fanaticism, the suicide attack was boosted recently as an American doctrine by Colonel Dale C. Smith. More important, it has been given serious consideration by high strategic planning groups.

This radical proposal springs partly, no doubt, from the example of the Japanese and partly from the boldness of thought of our new air arm, but mainly from the present state of the American armed forces. Colonel Smith's argument, briefly, is that since we have neither bombers with range long enough to make return trips over our target

OPPOSITION to this one-way mission idea logically would come from parents and wives of airmen. Volunteering for such one-way duty might be one answer to problem

DETECTION DEVICES would make it impossible for bombers to reach targets unannounced, but if 50 planes carrying atom bombs did get through to the target to create such damage as this at Hiroshima, it would not win the war

from this country, nor advanced bases from which to make return trips with existing aircraft, our only chance of a quick victory is what we call "one-way combat." As he points out, if we don't win a quick victory, time will probably *not* be on our side. This argument makes enough sense so that we should at least see whether the plan is feasible and whether there is any alternative.

In describing his tactic, Colonel Smith does not mention the foreboding word "suicide," nor does he propose that the pilots should dive their planes into the target and burn in the holocaust they have created. He plans merely that they should drop their bombs and then quietly run out of gas.

The psychological obstacles to such an attack are obvious, and its advocate does not shrink from them. There is, first of all, the reaction of the crews to a mission that will require either bailing out over a desolate waste or landing in the midst of a cruel enemy. In reply to this objection, the author goes to great length to describe how the grounded flyers can hide and live off the country, and how rescue missions can seek them out and return them to their homeland. He offers as encouragement the profusion of game in the Arctic, the possibility of finding sympathetic people among

BASES within striking radius of enemy can be built, but would take time, manpower . . . more than we now have

ASPHALT is needed to top runways. Speedy construction of asphalt plants call for more equipment than we have

the enemy and the advantage of not having to fly back to U. S. bases in the face of flak and enemy fighters.

A more serious obstacle, Colonel Smith seems to feel, is the opposition that would come from the mothers and wives of the prospective flyers. Their political pressure could prevent the use of the tactic even if it were proved sound from the military point of view.

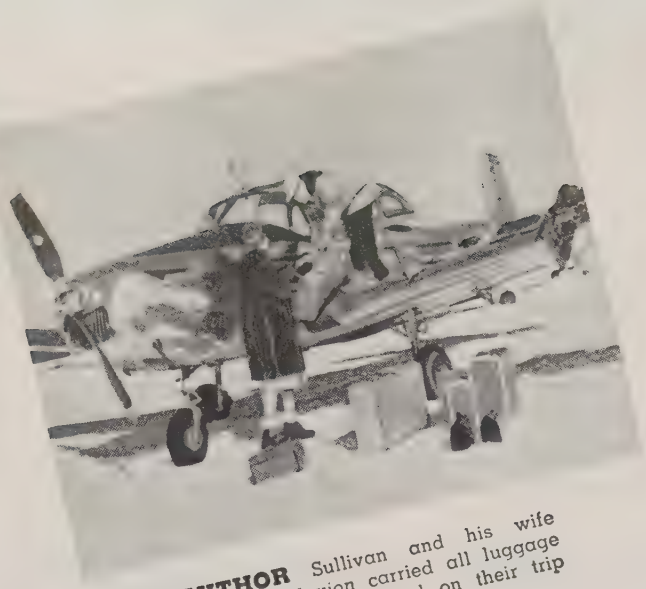
To this writer, these do not seem to be the principal objections to the plan. If it is all going to be over in a short time, as Colonel Smith hopes, public opinion is of little importance, for the whole project can be kept secret until it is accomplished, and the enthusiasm over a quick victory will far outweigh the sadness over the sacrifice of a thousand men. As for the crews, volunteers can be found, as they have always been found in any crisis we have had to meet.

The big question is whether "one-way" combat gives any sound expectation of knocking out the enemy's military strength. Colonel Smith claims that, with atomic bombs, 100 planes could drop twice as much destruction on Germany as was dropped by all the Allied air forces during the war. He does not say that they could drop it in the middle of Eurasia, flying from fields in the United States; but let us assume that each of the 100 bombers has the range to carry one atomic bomb to a selected target, and that we have the bombs and the crews. Does that mean that all the enemy's cities are going to be wiped off the earth?

Consider, first, how the planes must reach their targets. Up to a certain point, they can fly together, giving mutual support in case of fighter attack. Eventually, however, they must split up and go their hundred separate ways. They will then have to fly alone over many miles of enemy territory, through a network of warning devices, fighter concentrations and ack-ack. They will be sitting ducks for jet-propelled fighters firing projectiles which can find their own targets by electronic devices. If they fly low enough to bomb accurately, they will risk rocket—*(Continued on Page 44)*

RANGE of U. S. bombers is still main problem. Convair's six-engined B-36 *(above)*, with its reported ability to fly non-stop to any inhabited region of world and back again, might be one answer. Reports and stories to the contrary, guided missiles *(below)* are as much as five years away

ENGINEERS have produced answer to one problem—track gear on an A-20 enables it to land on soft ground



AUTHOR Sullivan and his wife found the *Navion* carried all luggage they wanted or needed on their trip

FLIGHT *West*

By D. E. SULLIVAN, JR.

TAKE-OFF was from Palwaukee Airport, Chicago, the morning of January 24. First stop for refueling was St. Louis

THIS is a story of high adventure. It is the simple narrative of two people and an airplane—a saga of a cross-country flight from Chicago to California and return.

As I look around my desk, all sorts of data could enter into the telling of this tale—sectional charts, log books, mileage notes, distances, memoranda on compass headings, etc., but the true spirit of all the fun we had would be lost to you in a maze of technical stuff.

The "we" was composed of my wife, Ruth, whom I came to regard as a better co-pilot than Bill Odom (apologies, Bill) and a better navigator than Mr. Magellan; our sleek, all-metal *Navion*, affectionately referred to as "Gabriel," and yours truly, the writer, who confesses a routine life of practicing law, but a somewhat more than casual interest in amateur piloting.

Two months of snow, slush, mud and murky skies around Chicago had decided the issue. When this was followed by days of damp and penetrating cold, we knew we were on our way—we were going to see some sunshine and beautiful country. The die was cast—there would be no turning back.

SNOW STORM forced the Sullivans down at Fayetteville, Arkansas, field where they enjoyed excellent service

CALIFORNIA'S Monterey Peninsula Airport was a scheduled stop on sight-seeing circuit the Sullivans flew

We had planned our departure, weather permitting, for the morning of Saturday, January 24, and for a couple of evenings in advance had busied ourselves with charting our course. It was to be via Kansas City, Tulsa, Abilene, Texas, El Paso and Phoenix.

Always, before starting a X-C, I make it a practice to get in step with the weather conditions a day or two in advance. This time the weather really looked good, and as late as 11 o'clock on the night before we were due to leave, clear weather was reported all along the way.

The next morning was a different story. As if temperatures of zero to five above around Chicago were not enough, the barometers at Kansas City and at Tulsa were dropping rapidly, with snow and lowering ceilings predicted for that area during the day. A somewhat frantic note of disappointment in my voice must have struck a sympathetic chord in the weatherman's heart, for he said that we probably could avoid all that by going down through St. Louis, and Springfield, Missouri. With renewed hope, we set out for the airport.

We had bought the *Navion* because we liked everything about it, and Ruth was particularly entranced by the fact that she could take all the clothes and luggage she wanted, regardless of the length of the trip. As I proceeded to load suitcase after suitcase into the *Navion,* following up with a few miscelleaneous boxes and other paraphernalia, and mentally weighing each item, a faint suspicion crossed my mind that little else remained back home in our apartment except the furniture. In fact one large box had much the size and weight of the dining room table. Well, I guessed, we could carry it, and besides — the mountains along the southern route were much lower. I'd just keep my fingers crossed.

Into the air, wheels up, *and* a tail wind right out of the Northeast, believe it or not. California —we were on our way! Levelling out at 5,000 feet, we looked out over the frozen flat country of southern Illinois, noted the almost imperceptible movement of those sturdy wings as they sailed through the clear blue skies, and smiled. Our adventure had begun.

A mere two hours later our wheels settled onto the hard and icy runway at Lambert Field, St. Louis. After replenishing our fuel supply, which is always the first order of business on landing, and one which I invariably *(Continued on Page 51)*

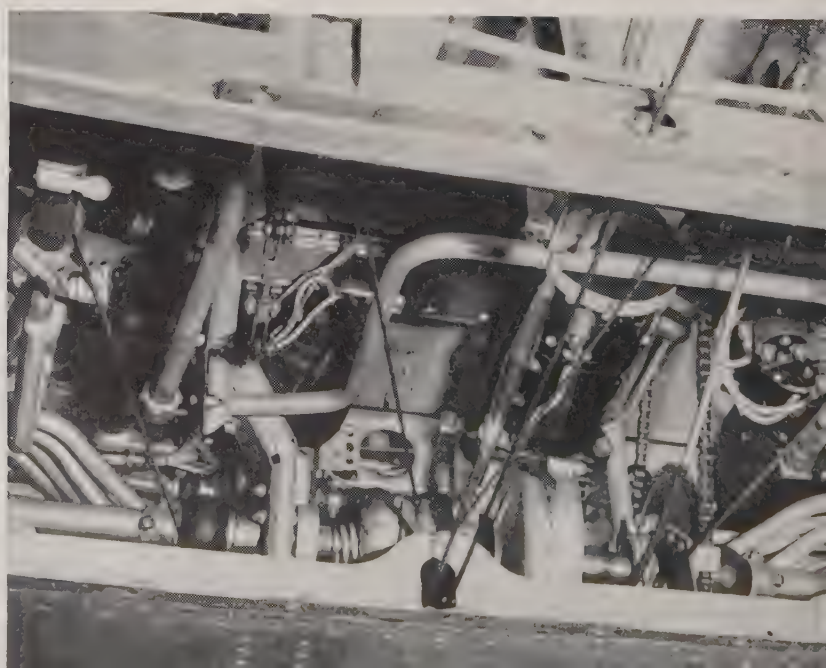
SNOW, SNOW . . . and more snow, even though the Sullivans dreamed of short sleeves and summer warmth in Texas

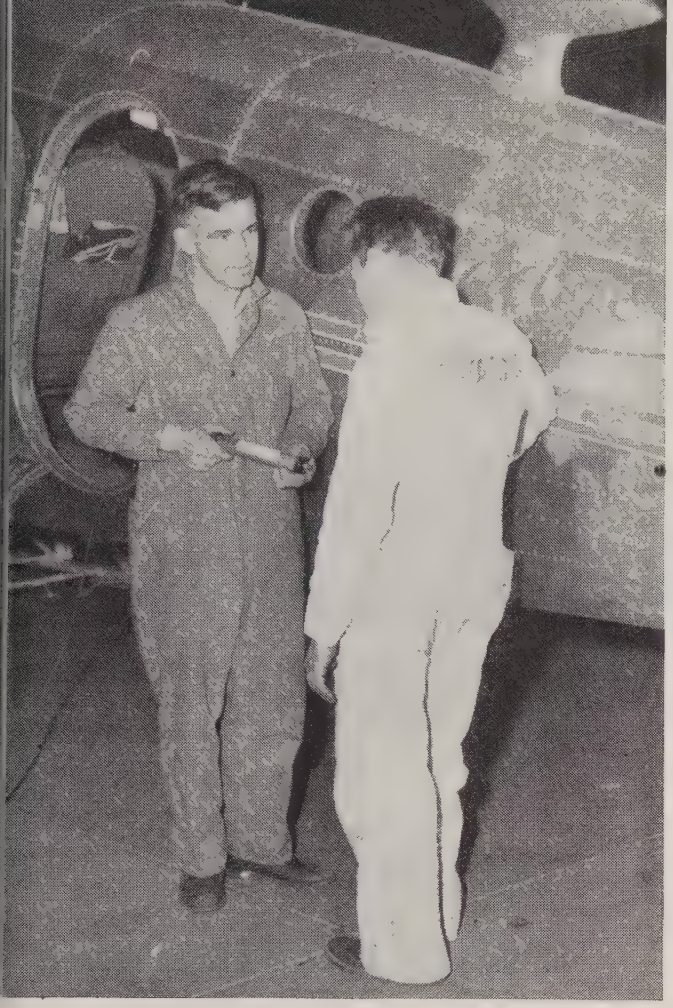
HUNDRED-HOUR CHECK completed, this company-owned Beech has its cowlings replaced prior to its being flown to home airport

D18S... Built fo

RUDDER return spring may chafe rudder control rod, so phenolic bushings and steel retaining clips are used to stop wear

PHOTOG took this shot of panel access under fuselage looking to rear. The landing gear motor and gearbox installation is in right center. Double fork connections to the left connects two wobble pumps





RADIO TECHNICIAN working on a twin-Beech shows Atlantic Aviation Chief Mechanic loop dehydrator

BUSINESS

From the pilot or mech's point of view, Twin-Beech is a good exec ship

By JERRY LEICHTER

THE Beechcraft D18S, seven-to-nine place twin-engined executive transport, is probably the most widely used business airplane of its class. It is fast, roomy and easy to handle.

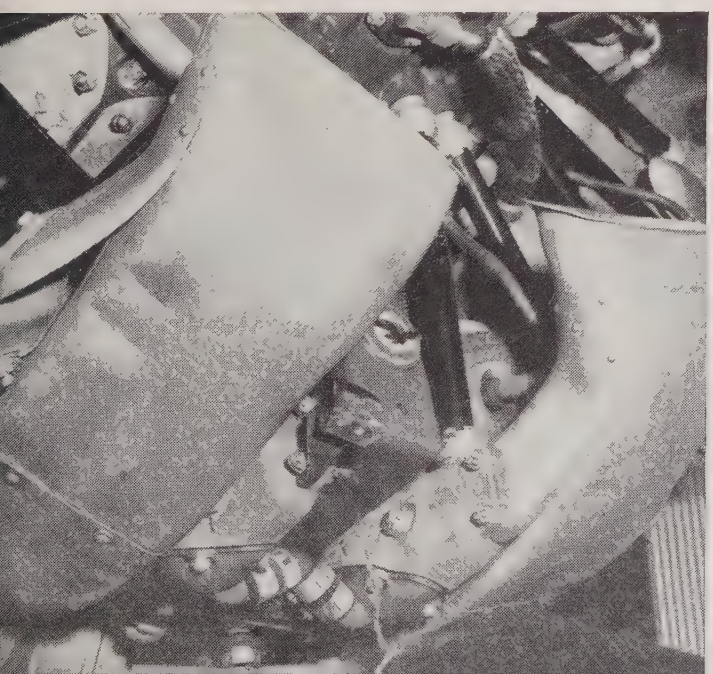
When any company purchases a new piece of machinery, it expects dependable performance, honest return on its investment and reasonably inexpensive upkeep. An intelligently run business cannot help applying these same standards to airplanes as adjunct business machines.

The first condition, performance, is built into an aircraft by the air frame and engine manufacturers. An honest return is dependent on maximum utility in its intended uses. Business reports rate the "twin Beech" high on these counts. The last factor—upkeep—is, as always, subject to variables.

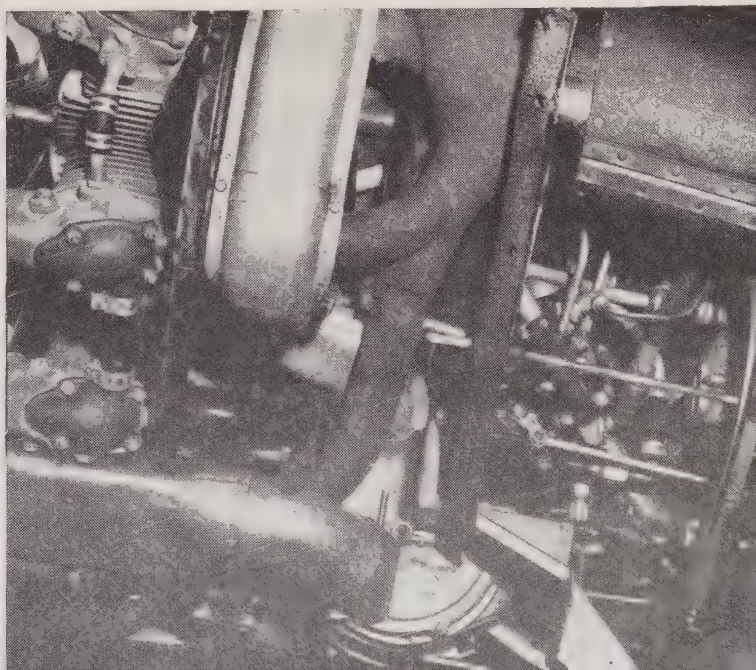
Maintenance charges are the cause of more griping, compounded by tight-fisted ownership or accountancy, than any other item in the cost of operating an executive plane. A pilot can be backed into a corner just so many times on keeping expenses at a hard minimum, then he stops arguing or quits. Cutting corners doesn't always pay.

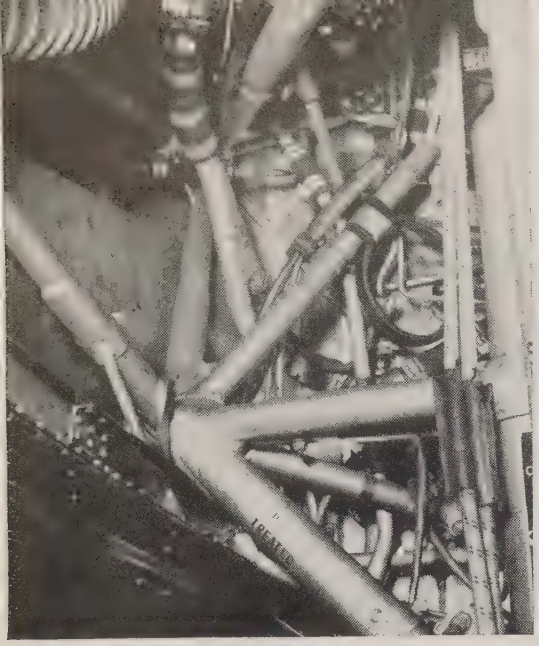
In the interest of a wider understanding of the sensitive maintenance points of a $75,000 business machine, SKYWAYS went to Atlantic Aviation Corporation, at Teterboro Air Terminal, N. J., to

CLOSE-UP SHOT here is of the twin-Beechcraft's air intake duct under the engine. Cracks may appear at the rocker box attaching point and also at the tube joints



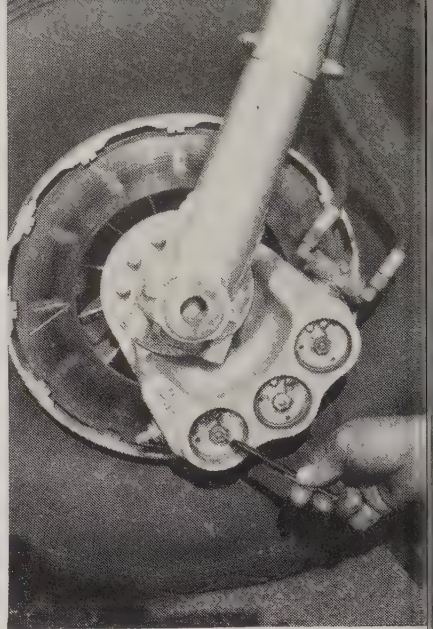
NEAR VIEW here shows left side of left engine, pointing up the exhaust collector at center running through the covered duct at the top. Section at right shows carburetor





WHEEL-WELL shot shows main oil line coming down from left side to "Y" drain in center behind gear brace

RIGHT-HAND section of wheel well shows the brake hydraulic lines in center and bungee cord section at the left. This bungee requires inspection



GOODYEAR brake shoe indicators are fairly low here. From the height of the brake shoe indicating pin, mechanic can judge brake wear

get the facts on the Beechcraft. Atlantic, in addition to being one of the more than 30 distributors and dealers for Beech Aircraft Corp. products, has a complete Beech-approved Class A maintenance set-up.

How does the Beechcraft D18S measure up on the score of maintenance? Does its high performance make it a "fancy Dan" needing constant inspection and parts replacement? The records say "no," with a "but" added, depending on the type of treatment it may receive under some circumstances and some types of ownership.

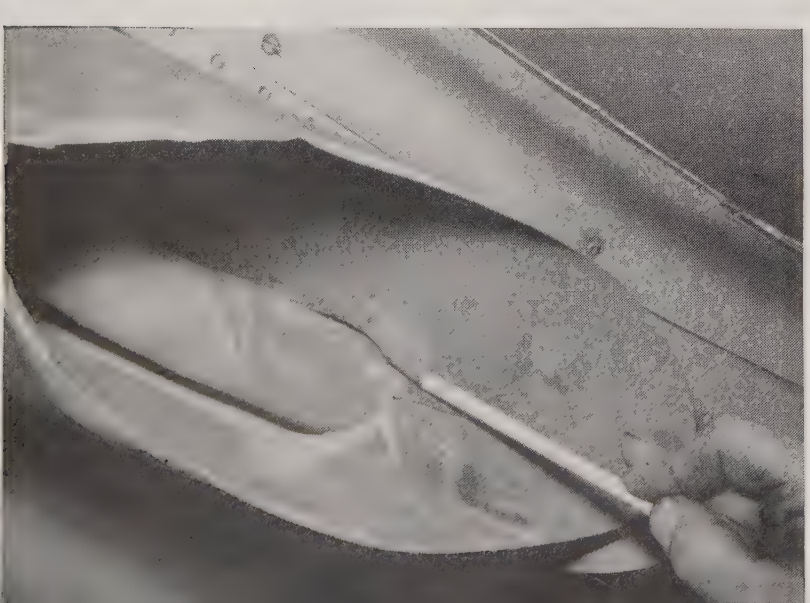
There shouldn't be any question on the normal cost requirments of maintenance and Beech cost charts include as typical allowances the complete factory overhaul of engines and propellers at 700-hour intervals and full service life depreciation of the engines at 5,400 hours on a yearly basis. But one type of maintenance—for instance, overhaul of the ADF loop because moisture-sensitive bearings get rusted — is unnecessary and could be avoided with elementary precautions.

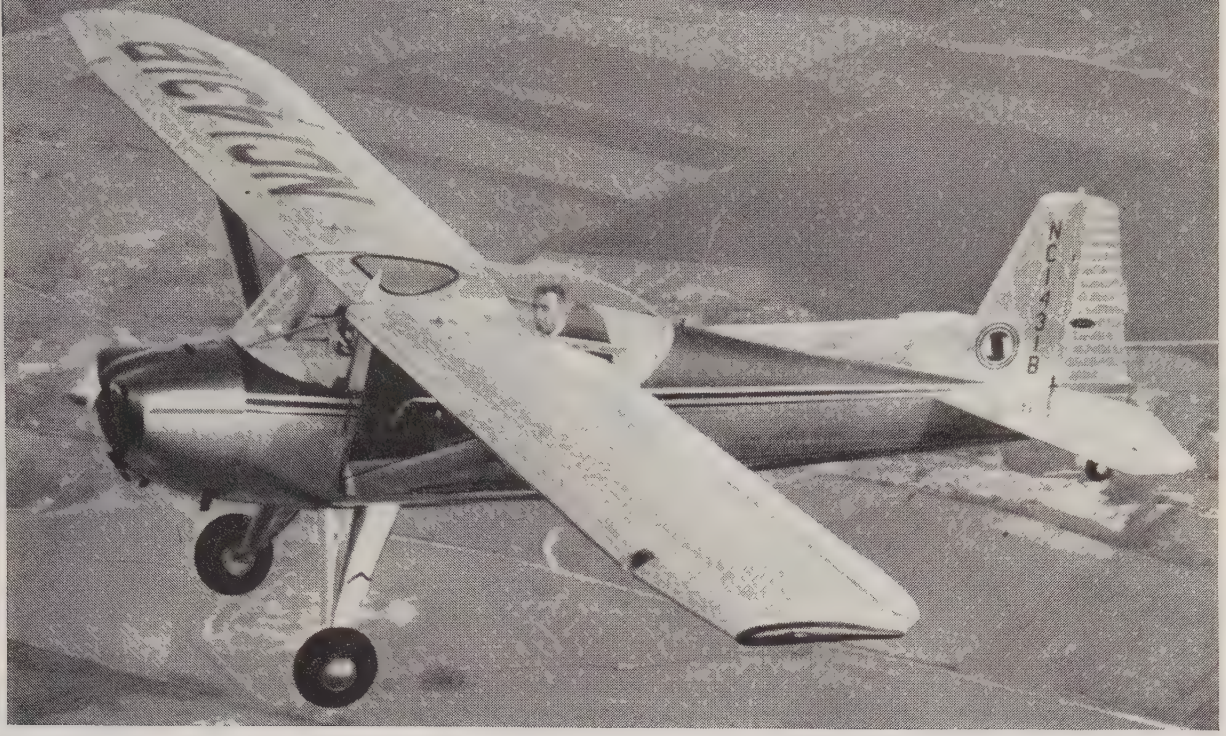
In its category as an executive plane, the Model 18 is a fairly complex aircraft. The demands of all-weather flying require equipment similar to that found on larger commercial planes: automatic direction finders, de-icer systems, airline instrumentation and other optional installations. Most of the Model 18's in service include those extras, but despite this, maintenance remains simple and routine in most respects. Experienced Beech mechanics call it an "honest" airplane.

If supervisory executives will remember, along with a few pilots, that an airplane has to have routine inspections at proper intervals, the cost of maintenance and overhaul work over a period of time will be lower then if the plane's operations are stretched. One bit of simple arithmetic translation might help make the point. The listed allowance for factory overhaul on the Pratt & Whitney *Wasp Jr.* is 700 hours, a period that might come up two or more times during the calendar year, if the engines run maximum time. If 700 hours is translated to read 135,000 miles of travel, a conservative estimate for the twin Beech, the actual need for the pause for overhaul should be obvious and make pointless a blind gripe about a plane that has to be in the shops for engine replacement two or more times a year.

Unfortunately, not all the reasons for pulling a plane out of commission always seem as credible and that's where a little of this understanding of the inner workings of the airplane become necessary. There was a mention *(Continued on Page 46)*

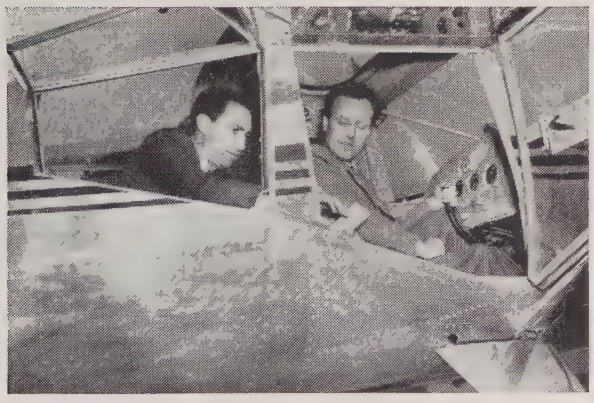
MECHANIC, examining an exhaust duct outlet, uses a pencil to show connection where breaks might appear





FLIGHT PHOTO of Luscombe's new all-metal *Observer* clearly shows the degree of visibility it provides

Observer 90



CABIN of the *Observer* is exceptionally spacious with both front and rear seats adjustable. All four windows in the ship are openable *(above)*. This combination of visibility, good performance, plus new and improved landing gear, rates ship high on list of this year's planes

LUSCOMBE Airplane Corporation has added a new model to its already long list of personal aircraft. This new one is the *Silvaire Observer-90*, an all metal tandem lightplane that will hit the market at $3,195 FAF Dallas, Texas.

Powered by 90-hp Continental engine, the *Observer* has a cruising speed of 112 mph, a landing speed of 48 mph and a range of more than 500 miles. The ship's rate of climb is given as 850 fpm, and its service ceiling 17,000 feet. It has a useful load of 550 pounds. The *Observer's* take-off distance at gross load (1,400 pounds) is 550 feet; its landing distance, 450 feet. Standard equipment on the *Observer* includes electric starter, generator, battery, instrument panel lights, navigation lights, landing lights, adjustable seats, door lock, cowl grilles and prop spinner. It also has dual controls and the new Silflex landing gear and full-swivel tail wheel.

Production deliveries on the new Luscombe all-metal tandem ship are expected to begin in late spring or early summer.

Report on MEXICO

By JOHN C. NOLAN

MEXICO offers visiting pilots plenty in way of sights, as, for instance, Pyramid of the Sun, 20 minute N of city

IMPROVEMENTS in air facilities are coming along slowly. Balbuena Field is one of best in Mexico

AVIATION in the Republic of Mexico, like ancient Gaul, is divided into three parts—but when one speaks of the part Civil Aviation plays as against Commercial, then the hangar walls begin to blister. (This article will not pretend to include Military Aviation in Mexico—the third part.) Commercial activities have been developed to a high degree of efficiency; whereas Civil facilities are the neglected stepchild of the Departmento de Communicaciones.

So far as commercial facilities are concerned, Mexico ranks high on the list of nations being serviced by air transport. For example, the Republic boasts a system of 31 competing airlines (eight of which are American controlled), and covers about

MONUMENT in center of Mexico City was challenge to one daring Mexican airman who flew through arches

35,000 route miles, as against the approximate 55,000 miles which airlines service in the United States—this despite the fact that U. S. population is more than six times greater than that of Mexico!

A total of 180 planes fly daily in the Republic. This figure includes the international planes on their way to and from South America; the direct service to and from the U. S.; as well as the strictly domestic carriers. All types of planes—passenger, express and freight—are included in this figure. There are routes such as that between Mexico City and Monterrey, and the East Texas industrial center, on which the passenger traffic often exceeds the capacity of the companies, despite the fact that American Airlines and Compania Mexicana de Aviacion (Pan American Airways subsidiary), and

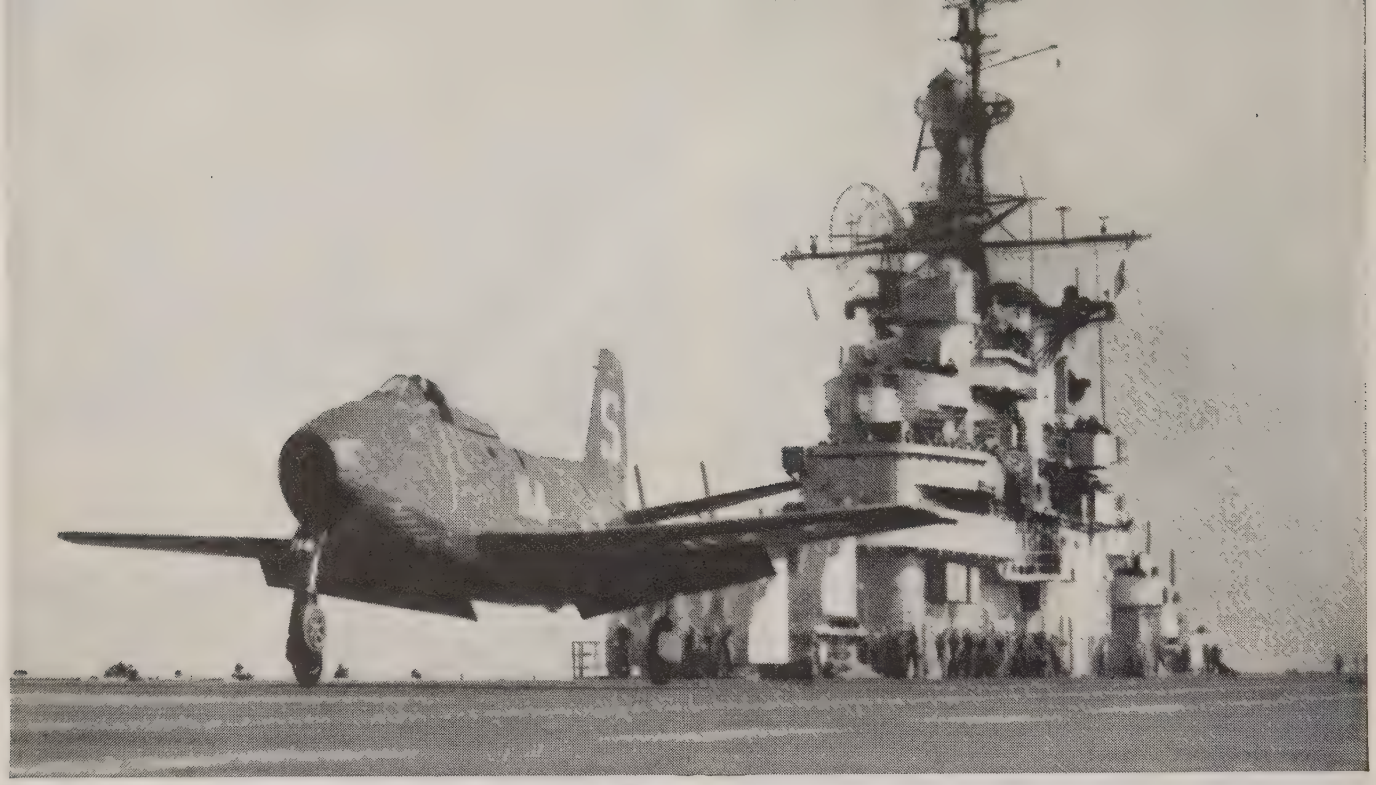
FLIGHT instruction that is given in Mexico is patterned after requirement of CAA in United States, and costs about 2,200 pesos for complete course ($450). Group of instructors *(above)* are kept busy teaching aero club *(below)* members

Braniff Airways operate several flights a day.

Including the 180 planes mentioned above, the Department of Communications has a total of 360 air transport planes registered as available for service and advises that the number is far short of the demand. Even so, lack of general service facilities and inadequate fields, keep many planes grounded. For example, some months ago two of the Budd-built *Conestogas* arrived. After having the proper insignia of the owning freight company painted on their sides and making one or two test flights, they have since remained tied down in an obscure corner of the field because the field and the plane just weren't made for each other. The field is too short or the *(Continued on Page 63)*

TOWER CONTROL is something to be desired at most of Mexico's air fields. Mexican adaptation of field control is this signal man *(above)* who waves ship's off, others in. Field *(below)* looks like many U. S. airports for private flying and is the one used by private pilots in Mexico

HANGARS were available at one time for private pilots, and rent for use was paid to Department of Communications. But then commercial aviation grew and private flyers lost the space. Today, however, new hangars are being built by some of the aero clubs for own private use



NAVY'S newest jet fighter, the North American FJ-1 *Fury*, demonstrated its ability to operate off a carrier in early spring maneuvers aboard the *U.S.S. Boxer* off the coast of southern California. Plans for the FJ-1 originated in 1944

Fighting FURY

By AL CONOVER

as told to Don Downie

SHE'S the best airplane I've flown yet.

Sure, there have been plenty of "bugs" in the FJ-1 *Fury*, but it seems that the planes with the "bugs" in them at the start always finish up as better airplaines than the ones that are nearly perfect on their first flight.

I didn't test hop the *Fury* on her first flight. Wally Lein, now with Northrop, made the first flights on this Navy jet fighter, but I was assigned to the ship as soon as I came to North American from Ryan a year ago. Someone wise-cracked that they'd traded me for the *Navion,* but that isn't quite right.

I've made about 250 flights in the *Fury* and most of them have been beautiful. The average hop lasts from 30 minutes to an hour and most of the evaluation work is done about 30,000 feet. When I

EXTRA WHEEL attached to nose gives it "kneeling action"

KNEEL-DOWN action of the *Fury* saves precious hangar-deck space on the aircraft carrier. Re-tracting nose gear is done by hydraulic hand pump

TEST PILOT who did most of the test hopping is author of this article, Al Conover

LANDING SIGNAL officer aboard the *U.S.S. Boxer* gives the pilot the "cut" signal. Ship landed with space to spare

get back down to 10,000 feet, I'm always worried about running into someone at the *Fury's* released speed of "more than 550 mph." It doesn't take long to get to the *Fury's* working altitude since the FJ-1 will climb a mile a minute.

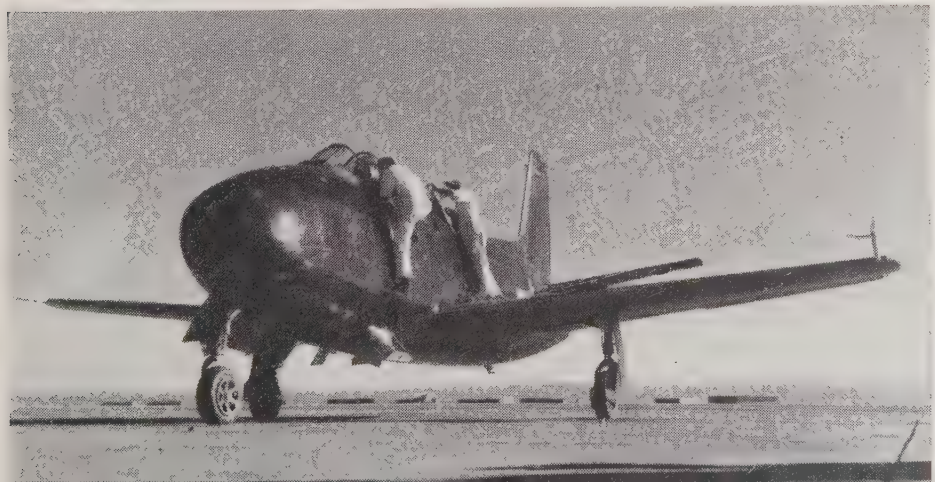
On my first delivery to the Navy test base at Patuxent, Maryland, I made the hop from Los Angeles to Oklahoma City in 2 hours and 8 minutes. I started my let-down from cruising altitude over Amarillo, Texas, 250 miles distant. Flying a jet like this is as different from flying a conventional plane as driving a Cadillac differs from a Model T. The main difference from the pilot's viewpoint is that faster reactions are required to go with the higher speeds.

In many ways, the jet is easier to fly than a conventional plane. There are only two engine instruments that need constant checking, the RPMs and the tail-pipe temperature. The other engine instruments are strictly secondary; no manifold pressure gauge, no prop controls and no cooling system to worry about. After working as a primary flight instructor at Parks Air College, doing drafting work for Martin and Bell, flying experimental test work on the C-46 for Curtiss-Wright and the FR-1 *Fireball* for Ryan, I'm in a fair position to appreciate the simplicity of operating this jet job.

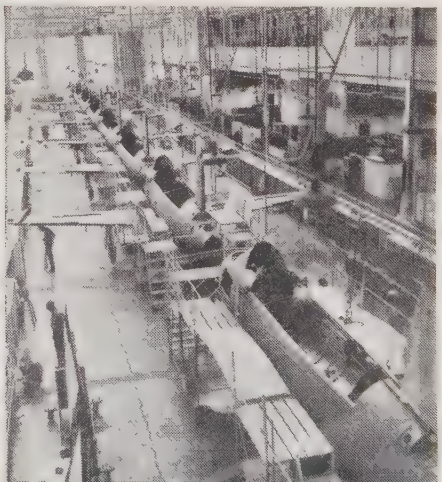
While many of the more interesting features of the *Fury* are highly classified, these comparisons can safely be made with conventional aircraft.

The *Fury* is a beautiful ship for simplicity in more than just engine controls. She has a single straight ram duct leading to a General Electric J-35-3 engine built by Allison. This is identical with the powerplant of the record-holding *Sky-Streak*. Actually the FJ-1 *(Continued on Page 50)*

WINGS of the *Fury* are super-thin laminar flow which contribute to the ship's very high speed. Powerplant of the *Fury* is the General Electric J-35-3



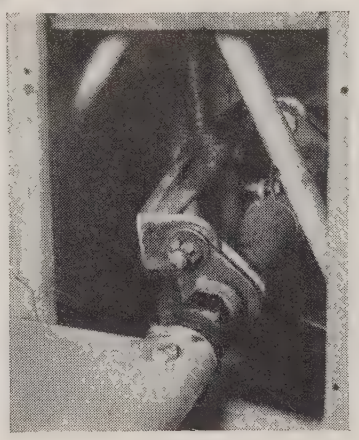
PRODUCTION LINE is already dealing FJ-1's to the Navy



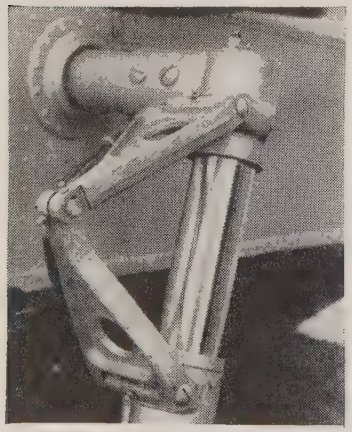
FLOAT'S spreader wire pull, if over-stressed, will crack before the cross-brace wire does. This close-up shot shows attaching point for the cross brace wire. On excessively hard landings, it's that attaching piece that cracks rather than cross-brace wire

Care in the maintenance of your seaplane willl save you dollars all year

By LEE IRWIN



WORM gear for adjusting the stabilizer on a *Cub* has to be disassembled and cleaned every 200 hours, according to Mellor-Howard operations. Small hole in tube cover behind fore part of worm gear brace is where oil is dropped for lubrication



ZERK fitting of *Seabee* is shown here. For correction operation, specified lubrication periods must not be skipped. Wheels and bearings should be greased every hundred hours, even if the plane is used only for water operations. Good care pays

PIPER *Cub* close-up shot of its elevator shows the application of paralketone to the hinge at right foreground. The small hole in the tube just inside the inspection port on the *Cub* elevator is for routine oiling. Good mechanics won't overlook this oiling

DAMAGE such as this to the bow bumper on Edo floats is no cause for concern if no leak results. Best thing to do is to make sure there's no leak, then merely repaint it. Repair work done on such a spot is more apt to cause leaks than the damage itself

EVERY navigable unobstructed waterway that is not restricted by law is as much an asset to floatplanes and amphibians as an airport is to conventional planes. But, just as assets are balanced by liabilities in financial ledgers, "liquid assets" have their share of liabilities for seaplane pilots.

Floats are expensive, but in most cases they long outlast the lives of the planes they're first installed on. Useful load is cut on the floatplanes by the weight of added equipment, and amphibians tend to be bulky and need higher-powered engines because of hull size, but this is all balanced by extra utility in the lake, river and coastal regions. Most important of all, careful maintenance, especially periodic lubrication, is essential to keeping the

$ave

"water wings" in good flying condition, but reasonable care can keep costs at the level of comparable landplane expenses.

Because hit-and-miss care of a machine that may cost from $3,500 up is an expensive way to gain knowledge, floatplane owners can best take lessons from the men who use them most—the float plane and amphibian fixed-base operators. But before running down to that nearby base it's best to have a short course in understanding the substances that make this type of flying possible.

In its pure state water is a colorless, transparent liquid with neither taste nor odor and has a neutral reaction. Natural water, however, contains many of the chemical compounds and minerals with which it comes in contact, since it is one of the most efficient solvents known, with very few substances not being at least partially soluble in it.

Progressing from rain-water to spring-water to sea-water in degrees of chemical content, each successively contains larger though minute quantities of acids, nitrates, sulphates, chlorates, sulphides, chlorides and other chemical compounds. Natural water is anything but neutral in its action on various materials, especially metals.

For that reason any airplane that will be used

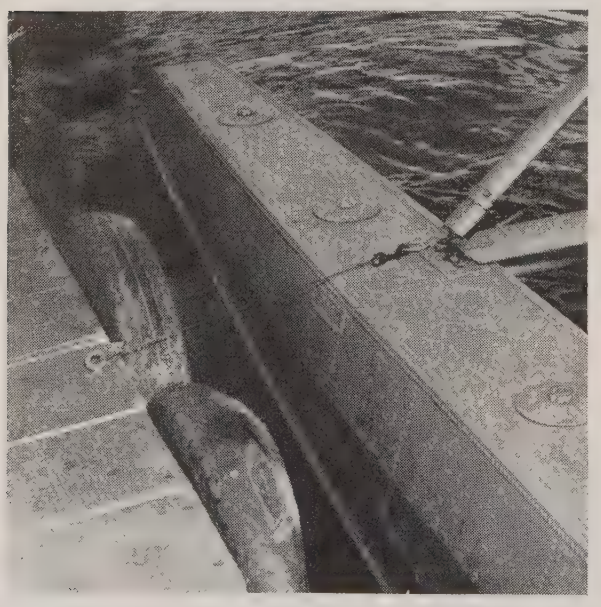
SEAPLANES based properly are wheeled up on dollies, kept in a hangar. Ships on floats include Cessna, Piper, etc.

your Seaplane

GOOD MAINTENANCE calls for washing down planes after every day's operations. This washing is important

SEABEE'S prop lubrication is done best with a flexible hose grease gun. Rpm loss was cleared by grease job

REFUELING, as shown here with a Piper Cub on floats, requires a flexible hose to prevent damage to ship



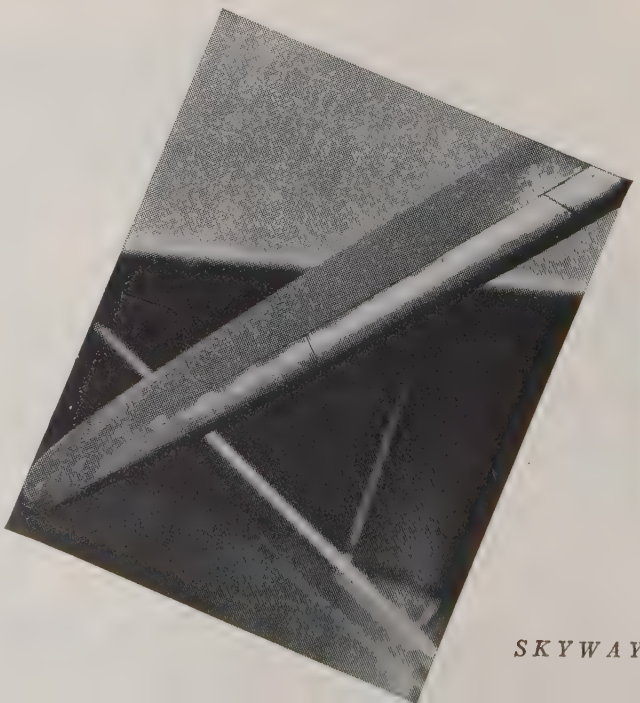
PIER that is lined with old auto tires offers protection for floats. In rough water floats rub against rubber bumper

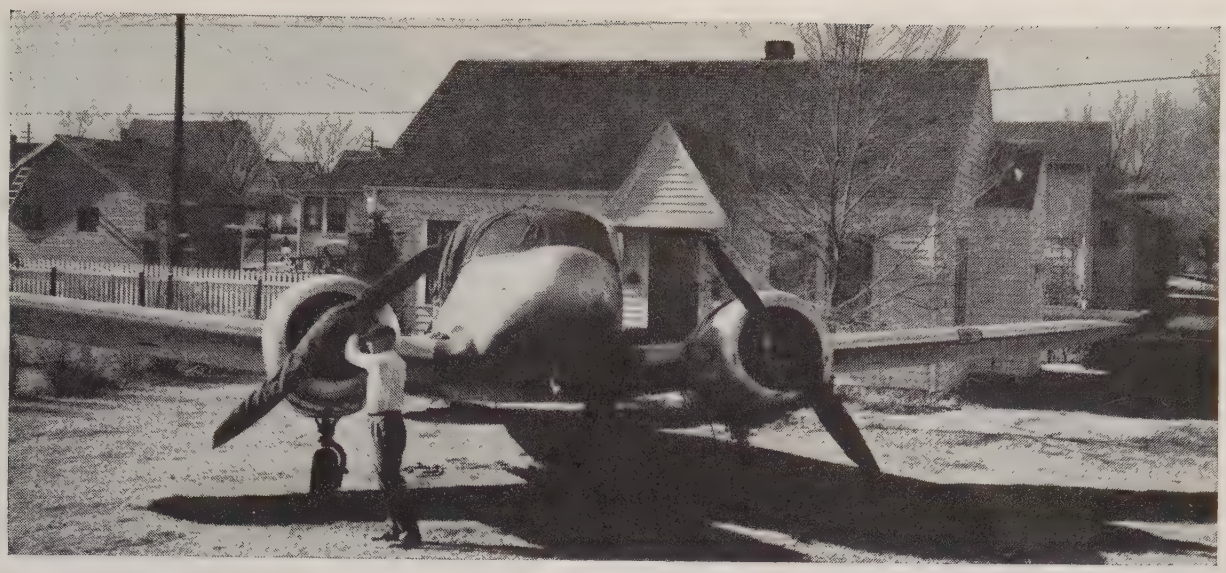
on floats requires special corrosion-proofing before being put into service. Floatplanes and amphibians also require special inspections to locate and check corrosion before it causes dangerous deterioration of aircraft and engine components. Corrosion-proofing is basically the same no matter where the plane will be operated, but inspection intervals differ according to the type water in which the plane customarily operates. Even landplanes which may be based within 10 or 15 miles of salt water should be checked periodically for evidence of corrosion of exposed metal surfaces.

The basic corrosion-proofing process can best be done by the manufacturer of the airplane before factory assemblage. Actual costs in the past have run from about $175 for fabric-covered planes to over $300 for all-metal planes, added to the list price of new aircraft. Not all manufacturers are equipped to do this work, but a letter to the factory before buying a plane will bring all information, including the price and type of proofing done.

Inasmuch as floats are expensive, many owners prefer to save wherever possible and buy planes as is and have them proofed at a base at the time the floats are installed. Any landplane can be adequately protected for float operation by an experienced operator. In addition, float manufacturers are glad to advise on any aspect of proofing, maintenance or operation at any time. Thus, while factory work is preferred as being *(Continued on Page 49)*

CRACKS around blade edge of a prop are due to vibration and deterioration of finish, causes unbalanced prop





FRONTISPIECE to a house is this twin-engine Cessna, both owned by Perry A. Rathbun whose hobby, too, is planes

FRONT YARD TIE-DOWN

RECOVERY of the plane, according to Rathbun's estimate, will take about six months. He works on it when he's through work at the field . . . and is probably the ony aircraft mechanic in the country who can walk into his own house when he needs a tool. Metal props *(right)* will replace ship's present wooden ones

WICHITA (Kansas, that is) is strictly an aviation-minded town. There are those who even maintain that Wichita's young are weaned on high octane gasoline. Be that as it may, one thing is certain . . . no one seems in the least surprised to see a twin-engine airplane sitting in a front-yard on Elm Street (Wichita, that is.) The owner of the airplane, as well as the house it's in front of, is Perry A. Rathbun, an aircraft mechanic. When asked about the plane, Mr. Rathbun calmly replied that planes were a hobby with him, that he'd bought it, war surplus, for $1,000, and that he was fixing the ship up for himself. The reason the ship sits in his front yard is that he works on it only in his spare time and he spends that spare time at home. When Perry Rathbun bought the ship, he flew it to Wichita from Texas, then taxied it home. In a few months he expects to taxi it back to the airport . . . and then fly it for fun.

'CHUTE CASE protects canopy from dirt but laying 'chute on ground, possibly in oil or grease, hastens wear

INSPECTION of 'chute every 60 days is requirement. Here 'chutes are being aired in tower of chute loft

Check that 'Chute

By J. P. JEFFERSON

"IF it doesn't work, bring it back." That's one bit of advice that just doesn't apply to parachutes. Yet it's surprising how many pilots will conscientiously give their planes a thorough line inspection before taking off, but would never dream of doing the same to their parachutes. And they should.

Part of the answer is that the average pilot seldom uses a 'chute and consequently doesn't bother to find out what a 'chute's all about. There's no better way to find out than to talk to an experienced parachute rigger like Joe Crane, of Mineola, Long Island. Joe and his partner, Roberta Garrison, run one of the finest parachute lofts in the country. Joe's been rigging 'chutes since 1930, and each month they inspect and repack some 200 'chutes from such companies as Grumman aircraft, Republic, Sperry, and the CAA too.

Talking to Joe, who incidentally is President of the Professional Parachute Jumper's Club, is one way to build confidence in these expensive and carefully made commodities.

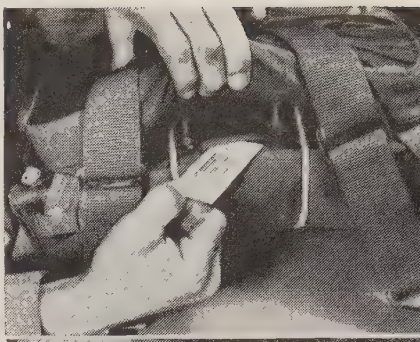
Recently at a G. I. flight school, a student who was pre-flighting a Stearman, was called up for letting his 'chute lie in the dust while he made his line check. Questioned about it, he said: "How can the dust hurt it. The chute's covered by a case, isn't it?"

Like most people, the student thought of the parachute as only the canopy that brings a pilot down to safety. A complete parachute includes the nylon canopy, the harness *and* the pack as-

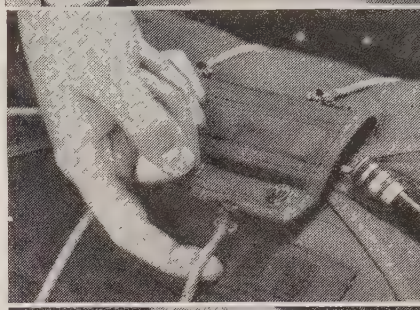
PRE-FLIGHT check by wearer calls for harness inspection. First place to show wear is at strap joint

sembly, or if you prefer, the case. This assembly protects the canopy from dirt and stains, but laying the pack on the ground is nevertheless one good way to get in trouble. Not only does anything that's dirty wear faster but, much more important, you're liable to put the 'chute in some acid, oil or grease. If you're not going to put on a 'chute immediately, put it in the cockpit while you check the plane. And don't use it as a step ladder or knee cushion while you inspect under the fuselage.

Now how to pre-flight a 'chute. To begin with, any parachute that's used in a plane is supposed to have been inspected and repacked by a licensed parachute rigger within the previous 60 days. Every parachute has an inspection card that fits in a little pocket marked "inspection card." When a rigger inspects and repacks a 'chute, he puts his signature and date of inspection on the card. And that's the first thing a pilot should look at. If the 'chute hasn't been inspected in the past 60 days, don't use it. In fact, since most operators are careful about such things, you may well be suspicious of any operator whose 'chutes are not inspected regularly. *(Continued on next Page)*

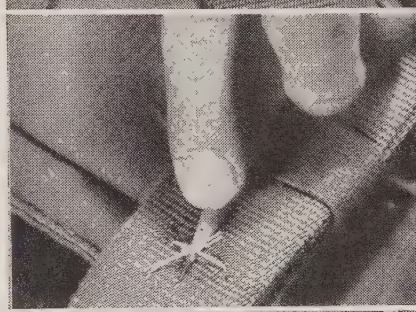


CARD that fits into small pocket between leg straps shows the date of last inspection and the name of the licensed parachute rigger who checked and repacked 'chute. That card is the first thing wearer should look for

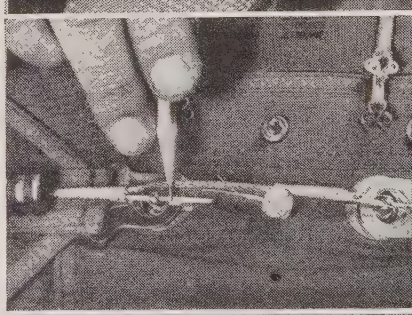


PACK opening elastics also need watching. These are attached to 'chute near flap that covers the rip cord prongs. When rip cord is pulled, prongs slide out and elastics pull corners of assembly apart. Check tension

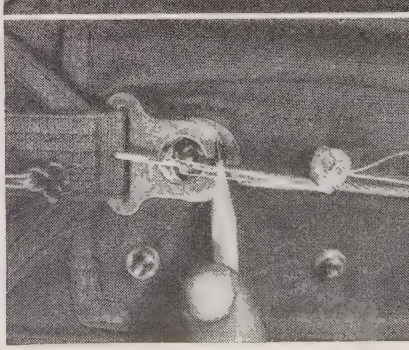
SNAPS that secure risers of the harness to the pack should be very carefully inspected to be certain they are secure. Some 'chutes have their risers tacked to the pack instead of using snaps. Always inspect the tacking, too



TACKING on the parachute instead of snaps, check carefully to be certain there's enough strength there to hold the risers to the pack. If the tacking seems to have weakened, give the parachute to the rigger for replacement



LOOK at the seal and thread of the parachute. If that is broken, it's a good sign that someone's been playing with the parachute . . . so don't use it! If everything is okay, don't forget to resnap that flap back in its place



RIP CORD prongs should be straight, not bent or corroded. If they are bent, they won't pull when the rip cord is pulled. A look at the rip cord housing, for kinks or sharp bends that might bind the rip cord, is a necessity

Next look at the rip cord. This is nothing more than a cable enclosed in a flexible housing, with a grip at one end and two prongs—like cotter pins —at the other end. These pins lock the pack assembly. As long as they're in place, the 'chute can't open. You check these by opening the snap flap that covers them. On a seat pack the flap is on the bottom of the assembly. On a back pack, it's on the back. The prongs should be straight, not bent or corroded. If they're bent, they won't pull out when the rip cord is pulled. Look at the seal and thread. If that is broken, it indicates that someone may have been playing with the 'chute, so don't use it. Don't forget to resnap the flap, and look at the rip cord housing for any kinks or sharp bends that might bind the rip cord if it were pulled.

Next inspect the pack opening elastics. These are attached to the 'chute near the flap that covers the rip cord prongs. When the rip cord is pulled, the prongs slide out, and allow the elastics to pull the corners of the assembly apart. They are replaced whenever they show signs of wear or of losing their tension.

After the elastics, look at the back of the assembly where the risers of the harness are tacked to the pack. Check this and if it has snaps instead, make sure they are secure.

Check the harness webbing for wear. Joe finds the first place webbing begins to show wear is where the back strap comes through the opening at each side.

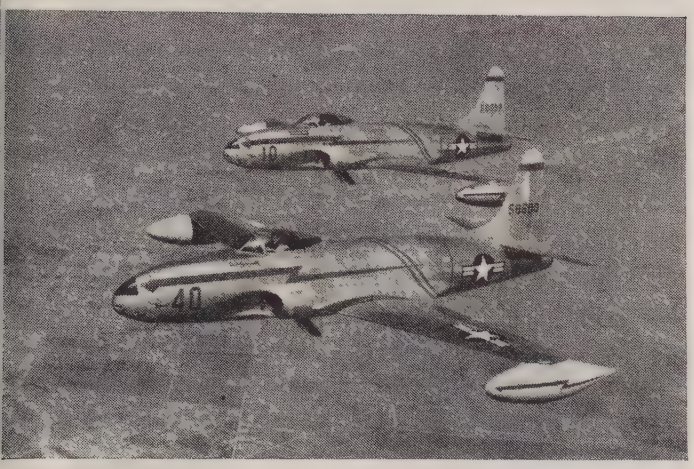
Next give your 'chute a thorough looking over. Look for tears, canopy sticking out, stains that may have gone through into the canopy. For those who have their own 'chute, grease is ordinarily removed with a substance called "Nacto." Other stains can usually be removed by washing the discolored area, on the assembly, with warm water and ivory soap, but be sure to remove all the soap after cleaning. The best advice is to immediately call any stains to the attention of the rigger. The sooner they're caught the better.

Some pilots may consider these checks useless since nine out of 10 times a rigger will have replaced anything that's worn, or he'll not relicense the 'chute until the owner authorizes a replacement. However, a good pilot never takes a chance on even the tenth time, especially when anything can happen to a 'chute between 60-day inspection periods.

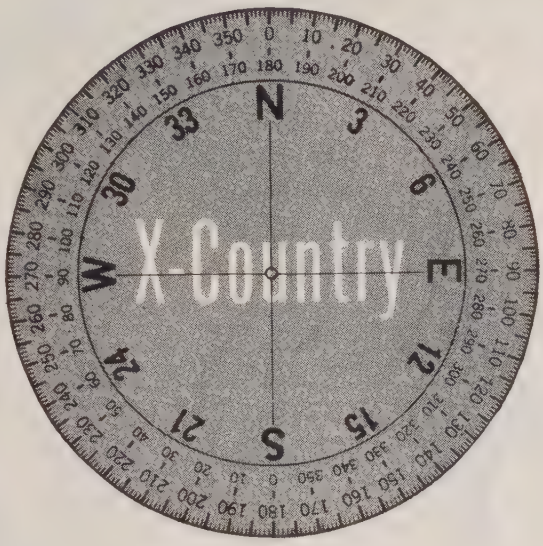
Some time ago, a private concern bought several 'chutes. One of them somehow got sopping wet two days after they were bought. Not until the inspection period, some 55 days hence, was the 'chute taken to Joe for repacking. It was as hard as a rock. The water had soaked into the canopy and the entire parachute was a complete loss. More important, it wouldn't *(Continued on Page 59)*

PROPER WAY to carry a parachute is by the leg straps. Either wear the 'chute or carry it the proper way

RIGHT WAY to get out of a ship, if you're wearing 'chute is to slip off harness and get out. Not this *below*

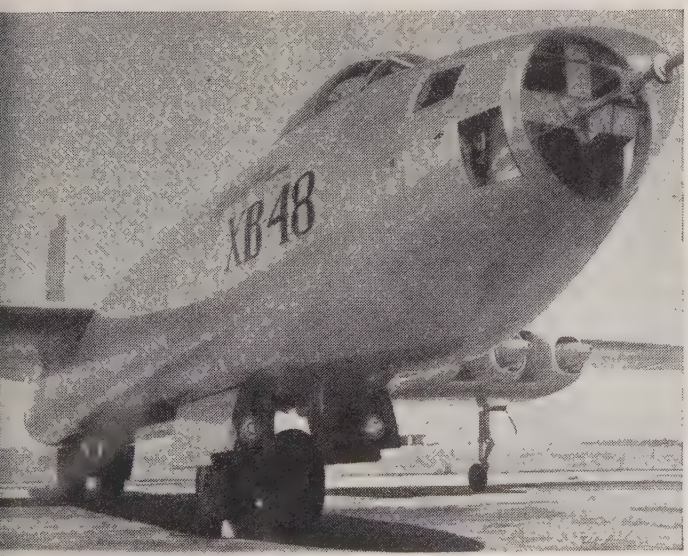


AIR FORCE recently announced that the 36th Fighter Group in the Canal Zone is now equipped with P-80B, Lockheed *Shooting Star,* jet fighters. The Canal Zone P-80's made the longest mass flight of jet-propelled fighters in history, 3,665 miles, to reach their base. The route included an 830-mile over-water jump from Florida to Jamaica. The 36th Fighter Group has 80 P-80's. Now operation of *Shooting Stars* reaches from the tropics to the Arctic, the Philippines, Okinawa and Japan as well as throughout the U. S. Special winterized P-80's are based at Ladd Field, Alaska. Canal Zone Group is headed by Col. H. R. Spicer.



ROLLS-ROYCE powers most of U. K.'s planes today. This formation of Royal Air Force planes was photographed over the countryside at Hucknall, Nottinghamshire, where the Rolls-Royce company has a large organization for testing installations of their engines. Pictured here, reading from bottom to top, are D. H. *Hornet,* powered by two *Merlins;* Gloster *Meteor,* two *Trent* prop-jets; Avro *Lancastrian,* two *Nenes* and two *Merlins; Meteor,* two *Derents;* and D. H. *Vampire,* powered by Rolls-Royce *Nene.* Note the feathered props on the Avro *Lancastrian.* This is the prop-jet version of the famed World War II U. K. bomber.

TANDEM LANDING GEAR on the new XB-48 is a revolutionary type gear developed by Glenn L. Martin Company. On the Martin bomber, one heavy dual-wheeled main gear is located forward, and a second main gear is far to the rear. Both gears retract into the fuselage. The small outrigger gears that extend from nacelles are used for balancing purposes during taxi operations only.

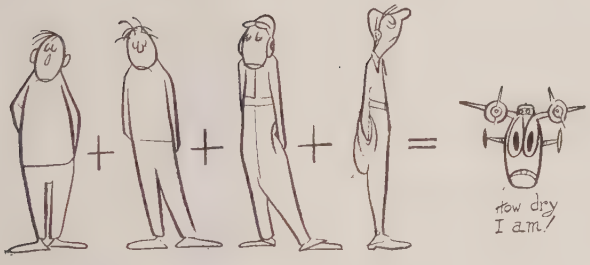


GRUMMAN KITTEN might be called a "collector's item" insomuch as only two were built. A year or so ago there was much conversation about this three-place plane but, unfortunately, it never went into production. This and one other, both prototypes, are used to haul executives around the country. Powered by 125-hp Lycoming, the Grumman all-metal *Kitten* has a cruising speed of 130 mph.

The bird and Dilbert discover jets travel!

DILBERT

By S. H. Warner and Robert C. Osborn



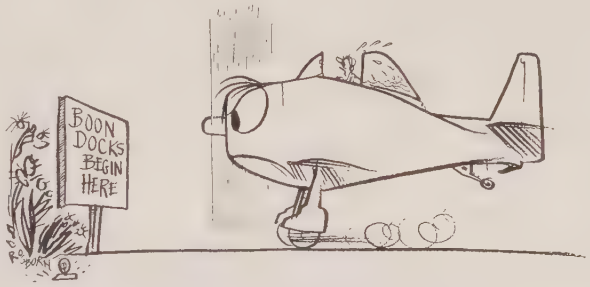
Whose Fault—Half way between the West Coast and Denver, the flight engineer of an ATS twin-engine cargo plane got a good scare. When he shifted fuel suction, he found he couldn't get a drop out of the starboard tank. He had personally filled it before take-off and the gauge registered "full," so he knew the fuel line must be blocked. Since they were then over very rugged country, he lost no time in notifying the pilot of their predicament.

Despite this perfect set-up for tragedy, this story has a happy ending. Fortunately, there were still 25 gallons of fuel in the port tank, which was just enough to enable the pilot to reach the nearest emergency field. Upon landing, it was discovered that the starboard fuel cut-off valve, which was not accessible in the air, was in the "off" position. Also, the valve handle was missing.

Because of the potential danger and circumstances involved in this case, a thorough investigation was made of the mystery of the missing fuel valve handle. It was brought out that this was the first pay-load flight after an overhaul during which the starboard fuel tank had been repaired. Also, that the plane had passed a satisfactory test flight after overhaul.

The upshot of the investigation was that the trouble board held the following personnel individually and jointly responsible for this near accident: (a) Overhaul crew, for faulty final inspection, (b) Line crew, for faulty maintenance inspection, (c) Test flight engineer, for failure to test positive fuel flow from both tanks, and (d) Flight engineer of this flight, for failure to check fuel flow from the starboard tank soon after take-off.

This crisis would have been avoided at any one of these stages, had the personnel involved carried out their assigned duties. You in positions of similar responsibility, take heed lest something similar, or worse, be pinned on you.



Numbskull-ery—The day Dilbert brought home his high-powered surplus property airplane was rather trying for his buddies. It was as though he had given birth to it himself, and they had to stand there and "oh" and "ah" while he rhapsodized over it, from variable pitch propeller to steerable tail wheel. Every few minutes he interrupted himself to exclaim, "Boy, she's out of this world!"

Finally, one of the gang callously asked if the thing would fly and Dilbert jumped at the chance to demonstrate. It seems he had flown this model during the war and knew all about it. At least, he had flown one *once.* *(Continued on Page 42)*

CAOA REPORT . . .

CORPORATION AIRCRAFT OWNERS ASSOCIATION, INC.

Corporation Aircraft Owners Association is a non-profit organization designed to promote the aviation interests of the member firms, to protect those interests from discriminatory legislation by Federal, State or Municipal agencies, to enable corporation aircraft owners to be represented as a united front in all matters where organized action is necessary, to bring about improvements in aircraft, equipment and service, and to further the cause of safety and economy of operation. The CAOA headquarters are located at 444 Madison Avenue, New York 22, N. Y.

CAOA had its origin in the hectic days of commercial aviation that followed the end of hostilities in World War II. At that time the volume of traffic at the airports and on the airways far exceeded the existing capacity for handling traffic. Something had to be done . . . and quickly. What followed — fortunately, not successfully—was a series of drastic and unwise measures proposed to control traffic on the airways and at the traffic control centers.

A solution that suits one does not necessarily suit all, however, and it was quickly realized that the interests of all aviation groups were being protected . . . all, that is, except one. And that one, a group of companies and corporations owning and operating their own aircraft in the furtherance of their respective businesses.

The airlines had the Air Transport Association representing their interests; the independent air freight operators had an organization, and the interests of the private operators of lighter aircraft had both the Aircraft Owners and Pilots Association and the Aircraft Industries Association. But . . . the operators of corporate aircraft were represented by no one.

The Result . . .

In the spring of 1946, therefore, a group of industrial executives who were charged with the responsibility of operating company-owned planes for executive travel saw the need for an organization that would protect the interests of their particular type of flying. Accordingly, a meeting was arranged and the first get-to-gether took place at the Wings Club in the Biltmore Hotel on May 17, 1946. Companies represented at that meeting included the Continental Can Co., Johnson & Johnson, Bristol-Myers, Manufacturers Trust Company, Time-Life Magazine, Johns-Manville, Atlantic Aviation and the Aircraft Industries Association.

A committee was appointed to develop plans for what later took shape as the Corporation Aircraft Owners Association. The first organizational meeting was held at the Statler Hotel in Cleveland on November 21, 1946. Over 30 persons representing the interest of 20 different corporations attended that meeting

Temporary Board Appointed . . .

An important first step was accomplished at the meeting held in Cleveland when a tentative set of by-laws was adopted, and a temporary Board of Directors appointed. This Board included representatives from Howes Leather Company, Sinclair Oil, General Motors, Bristol-Myers, Republic Steel, Champion Paper and Fibre Company, Goodrich Rubber, and American Rolling Mills. Mr. William B. Belden of Republic Steel was appointed Chairman of the temporary Board of Directors.

Association Incorporated . . .

During the winter of 1946 and 1947, monthly meetings were held by the Board of Directors and the arduous task of setting up sound by-laws and incorporating the association under the laws of the State of New York were completed.

In the spring of 1947, with everything in good basic order, the group of founding members joined the association on a dues-paying basis.

CAOA Officers . . .

Officers of the association, elected at the first Annual Meeting of the incorporated association on September 24, 1947, are:

Chairman of Board ..... Wm. B. Belden, Republic Steel
Vice Chairman ..... J. B. Mitchell, Howes Leather Co.
Secretary-Treas. ..... P. J. Lathrop, Bristol-Myers Co.

and Board of Directors:
D. S. Bixler, representing Sinclair Refining.
P. C. Craig, of Champion Paper & Fibre
J. G. Guess, of Burlington Mills, Inc.
W. C. Pague, of American Rolling Mill Co.
T. W. Hotze, of Reynolds Metals Co.
J. R. Dunham, of United Cigar-Whelan.

CAOA Membership . . .

There are two types of active membership in CAOA, and any company, corporation or partnership, fitting these requirements is eligible for memebership in the Corporation Aircraft Owners Association.

Regular Membership: Open to any corporation, company, partnership, institution or individual owning or operating aircraft as an aid to the conduct of its business, provided that business is not primarily in the field of aviation.

Associate Membership: Open to any corporation, company, partnership, institution or individual owning or operating aircraft as an aid in the conduct of its business which is primarily in the aviation or air transportation field.

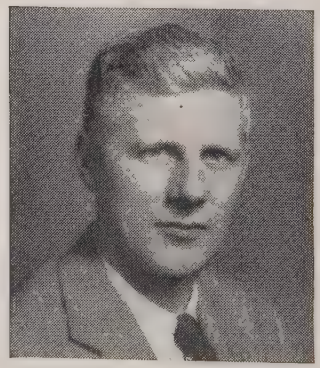
Dues: Initial dues are $100 for either type of membership.

Inquiries regarding membership in CAOA should be mailed to CAOA Headquarters, 444 Madison Avenue, New York 22, N. Y.

CAOA OFFICERS

W. B. BELDEN, Chairman of the Board of CAOA, has practiced law since 1931 and has been the Assistant Counsel of Republic Steel since 1936. He is graduate of Cornell University and Western Reserve Law School.

J. B. MITCHELL, Vice Chairman of CAOA, began his aviation career in 1939, soon after he left Harvard. Mr. Mitchell joined Howes Leather Co., Inc., of Boston in 1941, and then became head of its aviation department in 1946.



P. J. LATHROP, Secretary-Treasurer of CAOA, gained his experience in air transport operations as a Major in the USAF during World War II. A graduate of Princeton in 1931, Mr. Lathrop is vice president, Bristol-Myers.

Company-owned plane brings home the business

The 4-place Bonanza has boosters like Tom Dillingham in practically every field of business. They'll echo his statement that it's an investment that *pays!* The Bonanza operates at a cost as low as 1¢ per passenger mile.

At the airport, talk with any Bonanza owner. You'll know him by that proud, almost parentlike gleam in his eye! Ask him about the remarkable quietness of the cabin, and its economy, and all the claims that have been made for the revolutionary new Beechcraft Bonanza.

● A note on your company letterhead will bring an informative brochure on "The Air Fleet of American Business". Write today to Beech Aircraft Corporation, Wichita, Kansas, U.S.A.

Top speed, 184 mph
Cruising speed, 172 mph
Range, 750 miles

Tom G. Dillingham
INSURANCE and BOND SERVICE
BASS BLDG. PHONE 4111
ENID, OKLAHOMA

MR. WALTER H. BEECH
BEECH AIRCRAFT CORPORATION
WICHITA, KANSAS

MARCH 1, 1948

DEAR SIR:

I THOUGHT YOU MIGHT BE INTERESTED IN THE WAY I AM PUTTING MY NEW BONANZA TO BUSINESSLIKE USE.

I HAVE ALREADY MADE SEVERAL LONG CROSS-COUNTRY TRIPS IN IT AND HAVE FLOWN IT OFF HIGH ALTITUDE FIELDS IN PRACTICALLY ALL WEATHER CONDITIONS. I AM MORE THAN PLEASED WITH ITS PERFORMANCE AND FLIGHT CHARACTERISTICS.

FOR SEVERAL YEARS I HAVE COVERED QUITE A TERRITORY IN THE SELLING OF INSURANCE AND ADJUSTMENT OF INSURANCE CLAIMS. I AM NOW COVERING ABOUT THREE TIMES THE TERRITORY I DID FORMERLY AND I AM NEVER AWAY FROM HOME OVERNIGHT. I USED TO BE GONE TEN DAYS OR TWO WEEKS AT A TIME. I FIND I CAN GET INTO ANY FIELD THAT ANY OTHER AIRPLANE CAN, AND IN SMALL TOWNS WHERE THEY HAVE NO FIELDS, I USE A SMALL PASTURE, ACCOMPLISH MY BUSINESS AND LEAVE WITHOUT ANY LOSS OF TIME.

I ALSO OPERATE RANCHES IN COLORADO AND NEW MEXICO AND USE THE PLANE TO COMMUTE BETWEEN THEM, MAKING THE TRIP EACH WAY IN ABOUT TWO HOURS WHEREAS IT TAKES TEN OR TWELVE HOURS OF HARD DRIVING IN AN AUTOMOBILE.

THE BONANZA IS CERTAINLY MY IDEA OF EFFICIENT TRANSPORTATION, AND IT IS ONE OF THE BEST BUSINESS INVESTMENTS I HAVE MADE FOR A LONG WHILE. IT IS SO FAST AND ECONOMICAL THAT IT ACTUALLY PAYS ME A PROFIT ON ITS OPERATION.

INSUROR
MEMBER OF THE NATIONAL ASSOCIATION OF INSURANCE AGENTS

YOURS VERY TRULY,
Tom G. Dillingham
TOM G. DILLINGHAM

BEECHCRAFT
BONANZA
MODEL 35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Dilbert

(Continued from Page 39)

He only used about half the runway for his take-off. Soon after he gave her the gun, however, it was apparent that something was wrong. She didn't pick up speed. Two of the military pliots sensed the cause of the trouble immediately and yelled, "Low pitch!", but of course Dilbert couldn't hear them.

Knowing he was being watched may have influenced his judgment. He continued his sluggish take-off. Once he pulled her off, but she settled right back. He didn't cut his gun until almost at the end of the runway. The plane plowed through the boundary fence and into a large drainage ditch.

It didn't take long to determine the trouble. The propeller was found in "high pitch." Naturally, in that setting it wouldn't develop enough power to pull the plane off. A less excusable pilot error, however, was that of persisting too long in his take-off run.

Like practically everything else in aviation, adjustable-pitch propellers need understanding and intelligent handling to give satisfactory service. You aren't expected to know all about their adjustment and overhaul, but you better know how to operate them.

Here are the major pilot errors in connection with these propellers:

A. Attempting take-off in high pitch, as in the above case.

B. Landing in high pitch, which Dilbert evidently did on his landing before that last take-off. You can land in high pitch, if everything goes right; trouble only arises in an emergency. If you have to give her the gun to go around again, you won't have the power to climb. When you need that power, brother, you need it right now! That is why *all* landings in low pitch.

C. Failure to check propeller setting. If your power falls off, or rate of climb is slow, the trouble is often there.

D. Failure to use manual control unit when the control unit of an electric propeller becomes inoperative.

Get acquainted with your propeller. Know how to operate it.

Glassy Water—It's mighty discouraging the way some pilots never get the word. Despite all warnings about the danger of using their "landing eye" for judging altitude above glassy water, certain cotton-headed pilots continue to use normal landing technique under these conditions.

The results were almost identical in two recent cases. One of the pilots nonchalantly spiraled down to a landing. He was still in the turn when the low wing hooked the glassy water and spread the plane all over the bay. The other pilot misjudged his altitude to the extent that he was still in his landing glide when the pontoons dug in and snapped the plane over on its back.

Unless you are landing near some reference point, such as a boat, or buoy, it is practically impossible to judge altitude accurately when landing on glassy water. Training and experience are no help in this maneuver; it is due entirely to faulty depth perception.

Like so many aviation hazards, this one is easily avoided. Any good seaplane pilot will tell you that *only* power-stall landings should be attempted on glassy water.

Ace Racer

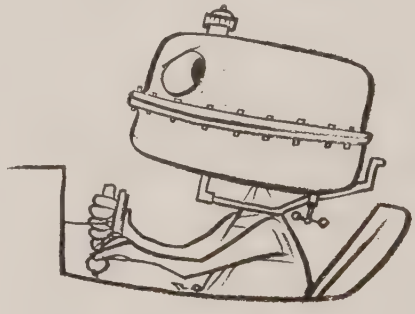
(Continued from Page 16)

ed, un-wed, to Hollywood. The next evening the same couple chartered the "Honeymoon Express" again. This time the plane had three passengers. The bride-to-be's mother went along to give her blessing!

"We still have an occasional honeymoon flight," said Mantz. "Our special rate to Las Vegas, including a stop-over for the ceremony, is $150. When off duty, each of the pilots on the payroll must keep in touch with our telephone call board when he is away from home at night, just like a doctor, for we never know when we'll be flying a celebrity to a hitching party."

Mantz looked at the gilded replica of the famed Bendix trophy on his desk and grinned. "I'm strictly a money pilot," he said as he re-lit his cigar between phone calls. "The record-breaking is mainly a form of advertising, and I've still been paid for every high-speed dash I've made but one. When I clipped 39 seconds from the San Francisco-Los Angeles record, I just wanted to prove that the P-51 could better the Army jet-plane time under ideal conditions.

"When I broke the New York-Los Angeles record in 7 hours and 4 seconds, Paramount Studios paid a good fee for having their film, "Blaze of Noon," painted on the side of the P-51. On the Bendix races, the prize money has paid the bill, of course.



Be Gas Minded!

"I never had money enough to race for the fun of it," reminisced Mantz. "When I finished third in the 1938 and 1939 Bendix races, I was flying an old Lockheed *Orion* that I bought for $500, and won $3,000 in prize money each race. The only way I was able to make any money at all was to fly instruments the whole trip. When I took off from Los Angeles, you couldn't see half way down the runway and some of the faster planes never got off the ground."

As a race pilot, Mantz figures all the angles. In 1947, Mantz resurrected an old idea from the Indianapolis auto races when the cars were restricted in fuel used. He flew his P-51 to the starting line at the Metropolitan Airport in Van Nuys and then drained the gas tanks. Hidden deep in his hangar at Burbank was a fuel truck loaded with 140 octane gas and packed with dry ice for three days prior to the race. The "frozen" fuel shrank slightly and he was able to jam more gas into his tanks than the other contestants. By the time the fuel began to warm up, Mantz was well on his way and had burned up enough gas to allow for the expansion.

Though he says that he is too old for closed-course racing, 45 years of age, Mantz is a foxy cross-country contestant. When his landing gear doors jammed open after take-off during the 1946 Bendix, Mantz didn't notice the drag until he was at 20,000 feet over Palmdale. He reefed back on the stick in an effort to close the doors with wind pressure underneath the fuselage. As he watched the doors inch closed, he was paying little attention to the altitude of the plane and, as the landing gear covers snapped locked, Mantz looked out to find himself on his back, half way through a loop. He half-rolled out.

"I thought that I'd lost so much time that there was no chance of winning, so I circled once and planned to return to Los Angeles. Finally I changed my mind and headed out again. When I landed before any of the 10 planes that had taken off ahead of me, I was certainly surprised."

Mantz wears two wrist watches all the time. During races, he trips one stop watch as he starts his take-off. Then as he levels off at altitude, he sets the other stop watch over some prominent land mark like the Colorado River, and can check both his elapsed time and cruising ground speed.

When asked, "What wins a Bendix," Mantz replied, "It's a combination of equipment, navigation and weather. There is no more luck involved than if you were to drive from the airport into town and consider yourself "lucky" if nothing happened."

Motion picture work consumes a large part of Mantz' time and covers a large part of his payroll. The charter work and location trips keep his planes fairly busy, but the big-money profits have come from furnishing planes for stunt work, camera ships and studio "props." In the 19 years that Mantz has been in Hollywood, he has grossed over $2,000,000.

His total flying time has been "over 10,000 hours" for the past five years. In that time, Mantz has had only one injury in a plane. During the filming of "Grand Central Station" with Richard Barthelmess, he broke his collar bone in a planned taxiing crash.

"Cars are more dangerous," said Mantz. "Years later I broke my hip in an auto accident driving home from the airport."

The Mantz Motion Picture Air Force is a legend in itself. He has 22 planes from World War I and all are flyable. He made headlines recently by purchasing $117,000,000 worth of surplus planes (they cost him $55,000) including 228 B-24's, 78 B-17's and 90 P-40's; 475 planes in all. Some have been sold, others stripped for parts and many are in storage at Flushing, N. Y., Washington, D. C., Stillwater, Oklahoma and Glendale and Van Nuys near Los Angeles. He pays $1,000 per month for hangar and tie-down privileges for 50 planes at the Lockheed Airport in Burbank where Mantz is the original tenant and once paid $35 per month for a hangar in which to park his one Fleet trainer.

"Have I got a housing problem," moaned Mantz.

"This motion picture flying of mine all started," said Mantz, "when I heard tha

(Continued on Page 52)

Standard of California's

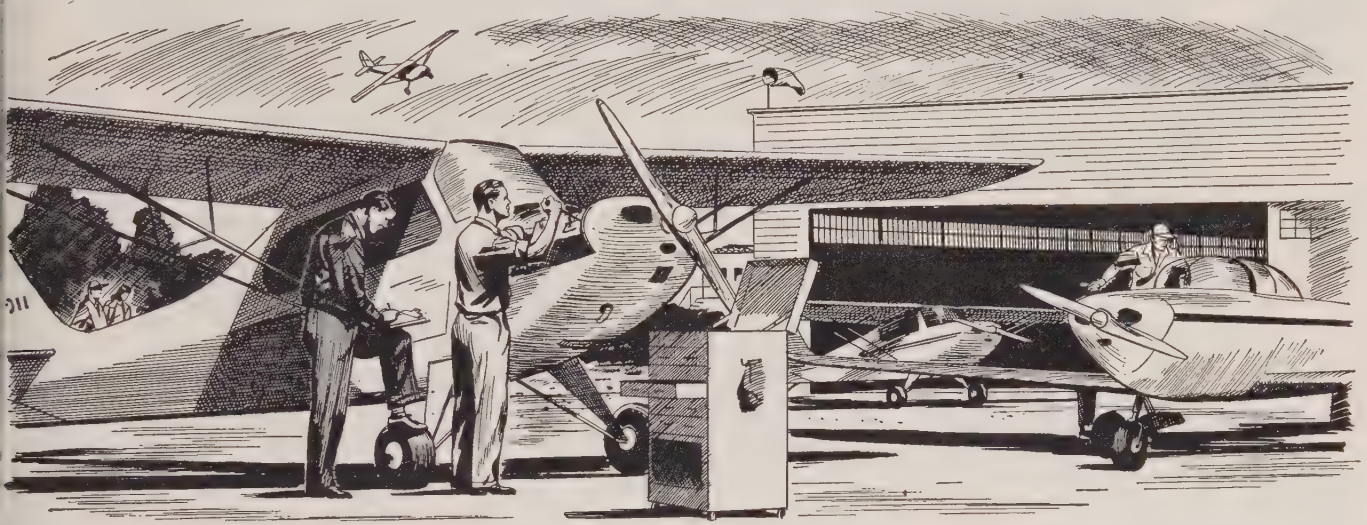
PLANE FAX

A page of service tips for private flyers and fixed-base operators

"RPM" cuts overhauls for Graham-Bell Aviation

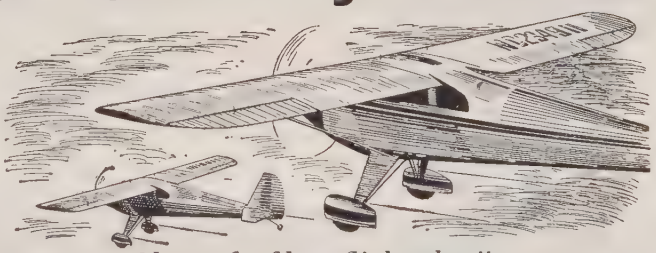
M. F. Downer, manager of Graham-Bell Aviation Service, Albuquerque, N. M., reports greatly reduced maintenance costs since switching to RPM Aviation Oil and Chevron Aviation Gasoline. He says, "We had considerable trouble with 65 HP engines suffering from sticking valves and bad rings . . . had to pull major overhauls at about 250 hours.

"We began using RPM Aviation Oils entirely. In checking the log books, we found one new engine had run 738 hours . . . another had the first top overhaul at 804 hours, and one of the original engines which was overhauled at 160 hours has been running without trouble for 558 hours." Mr. Downer added, "From these facts and figures . . . I know Standard Oil products have given us excellent results, for which I am truly grateful."

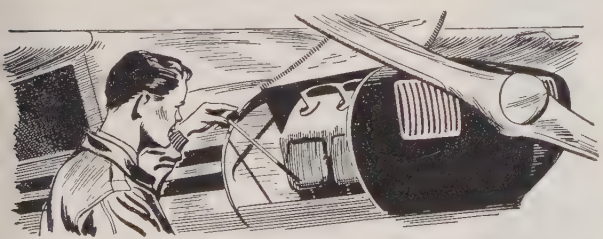


How to prevent stiff controls at high altitudes

In many instances, flyers find that aircraft controls stiffen at high altitudes. This is often due to the tendency of ordinary greases to become hard at low temperatures. That's why Standard of California has specially developed RPM Aviation Grease No. 1 to prevent it from stiffening in cold weather, yet stick to exposed parts at high speeds.



"Play safe - file a flight plan"



Use a Chevron National Credit Card

If you reside in the West, write Standard of California, 225 Bush Street, Room 1618, San Francisco 20, California, or ask the Standard Airport Dealer at your field for an application blank. Chevron National Credit Cards are good at airports throughout the United States, Canada and Alaska.

CHEVRON AVIATION GASOLINE

RPM AVIATION OIL

Standard Oil Company of California

One-Way Mission

(Continued from Page 19)

fire from the ground, heavy ack-ack, etc.

Supposing, however, that 50 of the hundred planes hit their targets and that 50 cities suffer the fate of Hiroshima. Will that win the war? Let us consider the results at Hiroshima as described in the report of the U. S. Strategic Bombing Survey, dated 30 June 1946. After describing the effect on human life, residential buildings and public utilities, the report says:

"The bulk of the City's output came from large plants located on the outskirts of the city: one half of the industrial production came from only five firms. Of these larger companies, only one suffered more than superficial damage. Of their working force, 94 per cent were uninjured. Since electric power was available, and materials and working force were not destroyed, plants responsible for nearly three-fourths of Hiroshima's industrial production could have resumed normal operation within 30 days of the attack had the war continued."

Now look at a map of Eurasia. There are several hundred centers of population, most of which are at least potential sources of war material. All of these, as well as the natural resources of the dual continent, can quickly be over-run by a centrally located and well-mobilized army. We cannot hope to keep even a toehold on the mainland if such an army starts to move.

In addition, there are the highly specialized industrial cities and munitions factories which have been in the process of building behind the Urals for a generation. Built for war and manned by slaves, these will continue to produce until they are bombed out of existence.

It is obvious that 50 successful sorties of the magnitude of those on Hiroshima cannot be counted upon to destroy the enemy war machine. But perhaps it is the morale effect that Colonel Smith is counting on, rather than the physical. Let us see what might be. Quoting again from the report of the survey:

"As distance from the target cities increased, the effectiveness of the bombs in causing certainty of defeat declined progressively:

Group of cities	*Per cent of population certain of defeat because of atomic bomb*
Hiroshima — Nagasaki	*25*
Cities nearest to target cities	*23*
Cities near to target cities	*15*
Cities far from target cities	*8*
Cities farthest from target cities	*6*

"Only in the nearest group of cities within 40 miles of Hiroshima or Nagasaki was there a substantial effect on morale."

Altogether, it begins to look as if 100 planes with atom bombs would fall far short of winning a quick victory. To determine the minimum number that could be counted upon to succeed would require a long and complex study which could be made only by a well-equipped staff. Perhaps it has been done, and perhaps Colonel Smith knows the answer, but it must be near the limit of our ready assets. Remember that there will be no time to train crews, for the whole point of this tactic is to beat the enemy to the punch. If we delay, he may be able to strike us in such a way as to prevent the launching of our attack, as by sabotaging our supply of bombs or of airplanes. Thus we should be forced into the laborious procedure of mobilizing our industrial strength, and rebuilding our attacking force. The enemy, if better prepared, would probably launch his main attack and put us on the defensive. From then on, it would be a war of attrition in which, as was said earlier, time might favor the enemy more than us.

If we are to use "one-way combat" at all, we must use it immediately with the men now in the Air Force and with the bombs and planes now in storage. Have we enough? Can we afford to sacrifice them?

Before adopting such a plan, we should at least explore the alternatives. Accepting the basic premise that we can win a war by bombardment alone, how can we deliver the bombs other than by suicide attack?

The answer that will leap to the minds of many people is "push-button" war—robots, rockets, and guided missiles. These things are far off. In a recent statement, an Air Force spokesman said that with unlimited funds, a long-range missile could be developed in five years, but that under present budget allowances, it will take 15.

Before that time, we shall have bombers capable of flying from U. S. bases to any probable target and returning, non-stop. With these, it will be possible to carry on a continuous bombardment of the enemy without exposing our flyers to any greater hazards than those of the past war. The very existence of a fleet of such aircraft will deter any except a technologically superior enemy from attacking us. But the world-circling bomber, too, is still in the development stage.

Until these new weapons are in production, we need another plan suited to the equipment we already have. This is the period for which Colonel Smith has proposed "one-way combat," and for which we are seeking another solution.

The normal solution is to obtain and prepare bases within striking radius of the enemy. This, Colonel Smith rejects because of the time factor. The preparation of such bases before the outbreak of hostilities is less a problem in strategy and engineering than in diplomacy. At the present reading it does not promise a satisfactory solution within the critical period.

It remains to prepare now to secure and build bases after the outbreak of war. A brief consideration of the difficulties of establishing bases will show why Colonel Smith decided that there would not be enough time. He was thinking of our B-29 bases in the Marianas during the past war, and remembering that it took two and a half years to re-capture them and another half year to prepare them for use. We certainly cannot afford that in a future war.

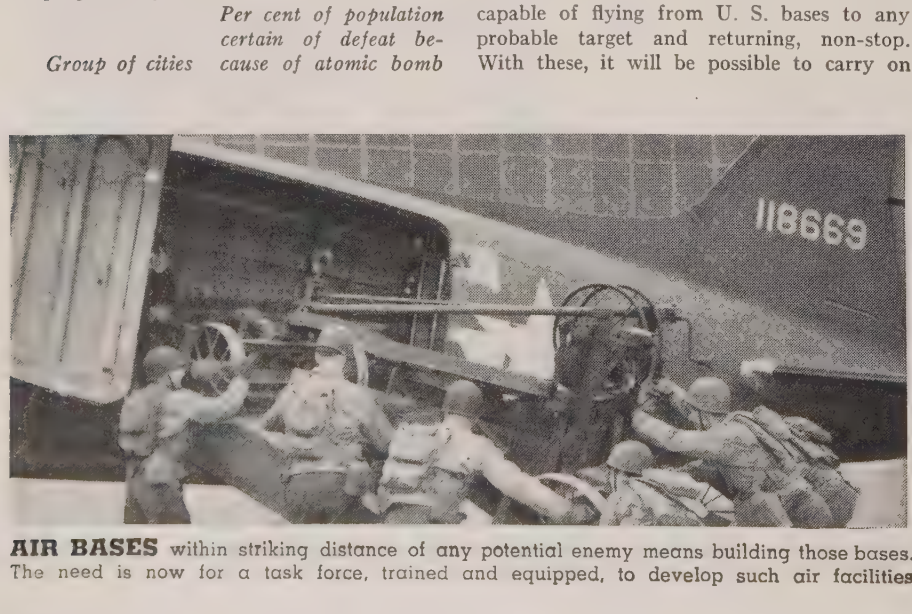
We captured Guam, Saipan and Tinian by an amphibious attack supported by a base and a fleet which had been wrecked. The base and the fleet had to be rebuilt and restocked before the attack could begin. After the island had been taken, we had to build runways to support the 30-to wheel load of a B-29. This meant blasting and crushing 25 million tons of coral and rolling it into place on carefully prepared ground. At the beginning of the war, we didn't even have the engineers and equipment to begin the job, so they had to be produced, too.

If a war were to start today, we should be little better off than we were in 1941 except that we have learned some things. We have learned what we need, and how to produce it.

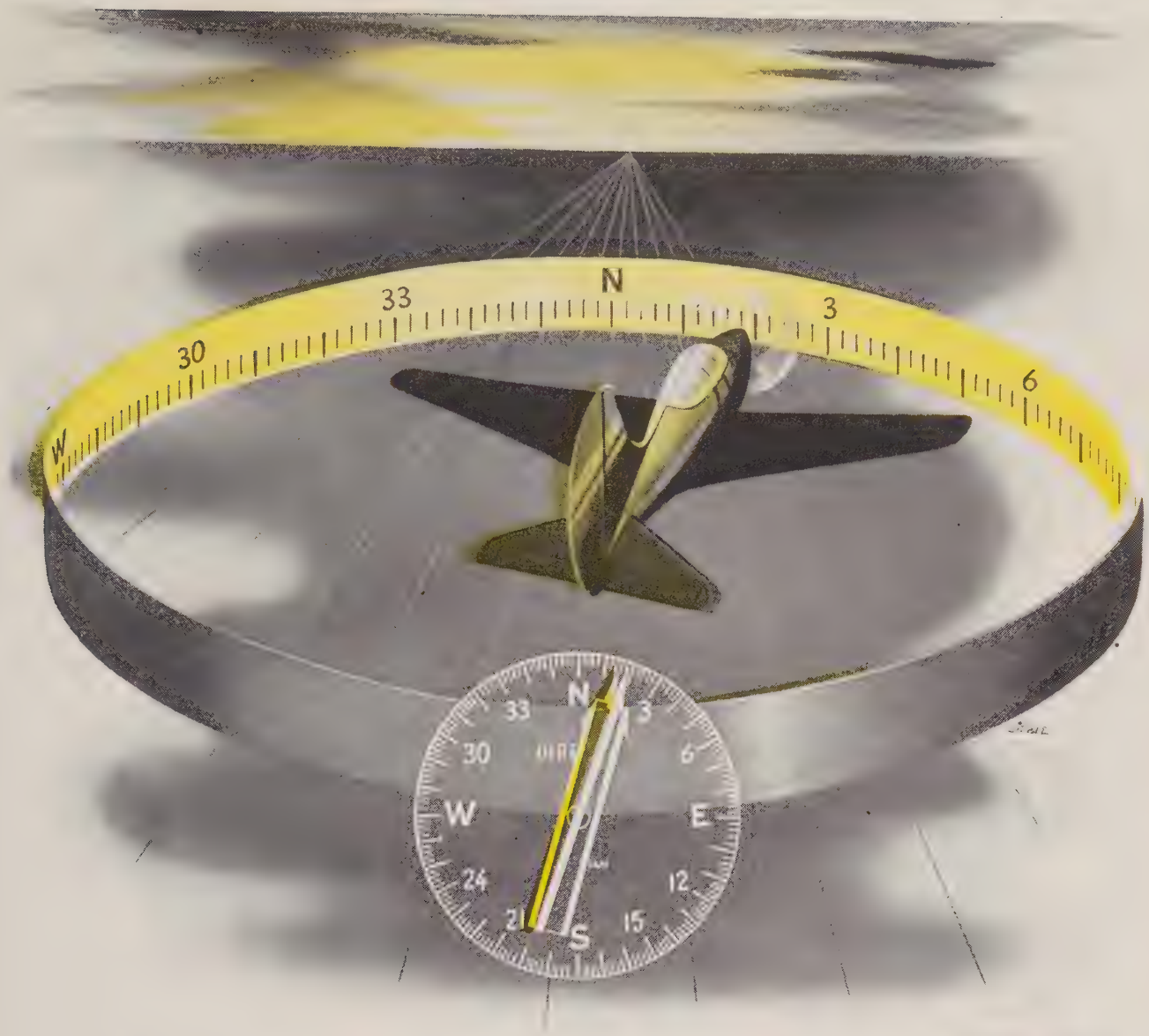
What we need is a group of fast-moving task forces, at least partly air transported and capable of building base facilities. We need these task forces not on paper or in skeleton form, but manned, equipped and trained to perfection. We need them not after the outbreak of war, but *now*.

Let us see what these task forces must comprise. They have two jobs, one tactical and one technical. Chronologically, the tactical comes first, for the site must be secured before the base can be built. A task force must therefore include combat troops of greater or lesser strength, depending upon the resistance to be overcome and the counter attacks that may be launched against it. In practically every case, the key combat unit will be fighter planes, for a ground victory can never be assured without an air umbrella. Paratroops, glider troops and amphibious landing forces may be used separately or in sequence to take the ground. Naval and air forces may be used for support

(Continued on Page 56)



AIR BASES within striking distance of any potential enemy means building those bases. The need is now for a task force, trained and equipped, to develop such air facilities



A Compass that Actually *Points!*

The flight-like indication of the new Kollsman Direction Indicator achieves a new realism in compass indication which has won the enthusiasm of many pilots. It exposes an entire 360° compass rose to view while its needle points the direction in which the plane is heading. Further, an index pointer is included which can be set to the desired compass course. The pilot thenceforth has only to keep the pointers matched. This new instrument is typical of Kollsman's continuous effort to make flying easier, more exact, safer . . . thereby increasing the utility and effectiveness of the airplane.

Write today for the illustrated folder describing the Kollsman Direction Indicator. Kollsman Instrument Division, Square D Company, 80-08 45th Avenue, Elmhurst, New York.

The Kollsman Direction Indicator is self-contained, with magnetic compass element of excellent performance characteristics. Very little "overswing", exceptionally stable pointer. Mounts on instrument panel like any standard compass.

KOLLSMAN AIRCRAFT INSTRUMENTS

PRODUCT OF

SQUARE D COMPANY

ELMHURST, NEW YORK • GLENDALE, CALIFORNIA

Built for Business

(Continued from Page 24)

about the ADF loop. Because the instrument bearings are sensitive to rust, an integral part of the loop installation is a silical gel dehydrator, designed to trap all the moisture in the air before it gets to the bearings. The dehydrator case, plainly marked with safe and unsafe ranges of color showing degrees of moisture content, is accessibly mounted in the D18's rear compartment. All that is required is that at least every two weeks (once a week in damp climate) the crystals be checked and replaced if necessary, or oftener if the color indicates the need. It sounds like a very simple precaution (silica gel costs only a few cents) but if you ask the radio mechanics who overhaul ADF loops, something is radically wrong with the people who fly. According to the mechanics, too many loops are in repair shops because the dehydrators are not checked as often as they should be. Company treasurers might match silica gel cents against loop repair dollars and ponder the ratio.

With an average cruising speed of 190 mph (maximum is 220 and up at various altitudes), the D18S requires a complete propeller, engine and aircraft inspection at about every 19,000 miles of air travel—or every 100 hours. Mechanics experienced in the ways of the Model 18 not only perform the routine inspections required on any aircraft, but their familiarity with the plane insures a faster inspection than is usually possible if a jack-of-all-trades handles the job. That's not a slap at transient or general maintenance work, but it should be recognized that the mere holding of an A & E ticket or years of experience as a mechanic does not mean that a man knows as much about a plane as a specialist on that type.

When the Model 18 goes into an approved Beech shop, the maintenance crew works according to standard forms that list all the required inspections on both engines and airplane. They know which systems require closer inspections and which inspection plates must always come off, no matter how many screws block the way. As comparatively simple as it is to maintain for a twin-engined airplane, the Beechcraft has its own peculiar quirks.

According to mechanics who should know the score, the time-tested Pratt & Whitney engines and the Hamilton props are usually trouble-free except for the normal amount of wear, tear and leaks that may crop up. The prop governors, always the touchiest section of an automatic propeller system, have to be watched for oil leaks. The engine accessory system is fairly accessible and the region forward of the firewall is not too jam-packed with system lines. Other units found in the wheel wells directly behind the firewall are easily inspected, including items like the main spar wing bolts which must be checked for proper fit and safety. Beech familiarity comes in especially handy when adjusting the landing gear limit switches for correct travel cut-off, an operation which might lead to trouble if mishandled. The wings involve checks of the deicer boot system, if installed; inspections of control cables, bellcranks and hinge attachments for both ailerons and flaps, including operation and security.

"You wouldn't let me play . . . so now go get your own ball!"

A large fuselage panel directly below the cockpit gives access to the electric motors and gear boxes which operate the landing gear and flaps, in addition to a fuel section including lines, a double wobble pump and controls. As far as the motors, gearing and chain drives are concerned, mechanics agree that as long as limit switches are adjusted and checked at regular intervals there's little trouble found in that department.

The tail group, while ordinarily comparatively easy to check, makes a good illustration of the problems that only mechanics familiar with the twin Beech should handle.

No matter how much testing an airplane may receive from a manufacturer, actual field use is the crucible that proves out its good points and reveals any "bugs" that may not have been apparent during test. Airplanes getting thousands of hours of flying in different climates, handled by many different pilots with unlike techniques, reveal hidden potentialities that might not otherwise come up, even in accelerated life tests. It happens with any airplane, the Beechcraft is no exception, and that's where the knowing mechanic comes in.

The most typical "for instance" involves a periodic inspection and modification (when necessary) ordered by a Beech Service Bulletin, involving a check of the stabilizer spar for cracks and a revision of the stabilizer attachment to eliminate the possibility of cracks occurring under abnormal operating conditions. Any good mechanic can make the inspection (and changeover, if required) merely by following the directions and diagrams in Bulletin No. D18-48, but a man who knows the twin Beech will immediately recognize, before removing panels, whether the modification has already been performed by spotting one small indicating feature —an extra large rivet head showing just under the edge of the fillet at the bottom side of the stabilizer-to-fuselage junction. That recognition factor, in other cases as well, pays off in saved time and labor.

Special know-how also comes in handy in another operation in the same section—where the tail surface control cables cross pulleys at station No. 13. Cables formerly found to be fraying in this section have their tension lowered, correcting the condition—valuable information when it comes to checking for proper cable tension at a routine periodic.

Other Beechcraft maintenance tips are common also to several other types of planes: checking for cracks at joints and welded connections in the exhaust system, especially in the outlet area; replacing the brake shoes in the Goodyear assemblies when the indicators show excessive wear; checking the aluminum air intakes below the engines for cracks at the attaching brackets where vibration is most felt; correcting excessive play in the cowl flaps and landing gear doors and checking for firm attachment of engine cowl bracket boxes.

Mechanics feel that excessive maintenance bills on the Beechcraft may usually be traced to either operational abuse or attempts by pilots and owners (occasionally ordered by the latter) to stretch the time between periodic inspections. This becomes most obvious in radio maintenance, an important part of the proper upkeep of the Model 18 since it carries more radio equipment than most privately-operated aircraft. The men in the electronics shop are unanimous in stressing the observation of proper inspection periods for radio equipment—a minimum of 100 hours and a maximum of 200 hours between bench standard tests, with the minimum figure preferred for best service.

The point that the radio men make applies as well to the entire airplane. They stress that at times the depreciation in performance may be so gradual that it is not noticed, so the tendency is to by-pass the preventive maintenance checks until major repairs suddenly become necessary, putting a plane out of commission for longer periods than would otherwise have been the case. A plane equipped for all-weather flying should be safe for all-weather flying and an emergency is no time for dependence on weary equipment.

The maintenance reports on the D18S show that it is not a tinker's special, despite the obvious results of occasional owner laxity.

The twin Beech was engineered for businessmen—smart businessmen.

PLAN FOR SECURITY...

The mission of the United States Air Force is to defend this country against foreign attack. THREE major operational commands synchronize to further this mission. ¶ The Air Defense Command . . . to protect continental United States against air attack. ¶ The Strategic Air Command . . . assigned to intensive, sustained long-range bombardment and fighter operations, alone or in cooperation with land and naval forces. ¶ The Tactical Air Command . . . for attacking enemy aircraft, wrecking hostile troop-lines of communications, and destroying supply concentrations. ¶ Republic's P-84 Thunderjet is designated for duty with ALL THREE commands. The fundamental versatility, ruggedness and striking power of its predecessor, the mighty P-47 Thunderbolt, is inherent in today's 600 MPH THUNDERJET. ¶ Through the closest cooperation between the Air Materiel Command and Republic Aviation Corporation . . . a rapidly increasing number of P-84's are daily going into active service at American Air Bases . . . to guard the security of our nation . . .

REPUBLIC AVIATION CORPORATION, FARMINGDALE, LONG ISLAND, N.Y.

AIR POWER IS PEACE POWER

"This Is the Year of the Thunderjet"

REPUBLIC AVIATION

Makers of the Mighty Thunderbolt • Thunderjet • XF-12

MACCHI MB-308—Slowly but surely private flying is returning to Europe. Here is a new Italian plane. A two-placer, it is powered by 60-hp engine, cruises at 100 mph

HANGAR FLYING

Skyway Designations

PRIVATE PILOTS are now the proud "possessors" of four aerial highways. Called "Skyways" these air lanes for the private pilot mark the beginning of a program that eventually should see a complete network of aerial arteries for the very special use of the country's private pilots. Mark these down:—

SKYWAY No. 1—Coast to coast along Southern section of the country from Washington, D. C. to Los Angeles.

SKYWAY No. 2—Northern route across country with terminal points at Seattle, Washington, and Boston, Mass.

SKYWAY No. 99—Along Pacific Coast from Canada to Mexico, following a route from Medford, Ore., to Dunsmuir, Red Bluff, Sacremento, Fresno, Bakersfield, Los Angeles, San Bernadino and Calexico.

SKYWAY No. 101—Along Pacific Coast, from Eureka to San Francisco, Los Angeles and San Diego.

Each of the Skyways is 40 miles wide and all will be clearly air-marked very shortly.

Seaplane Regatta

PLANS have been completed for a New England Seaplane Regatta over the Memorial Day weekend at Lake Winnipesaukee, New Hampshire. Well-known seaplaneer Bob Fogg, of Edo Aircraft, is Chairman of the Committee on arrangements.

On Saturday afternoon, May 29, seaplanes from practically all of the eastern states will converge in The Weirs bay on the Southwest side of Lake Winnepesaukee, and be moored along the ample beach space that is available there. The committee promises plenty in the way of entertainment for the visiting airmen Saturday night. On Sunday the guests will "explore" the whole area by air or boat, and an excursion or two will be made to the nearby White Mountains. It should be fun and a swell get-together for seaplane and amphibian enthusiasts. If you're interested in going and want more details, a letter to Bob Fogg, Edo Aircraft, College Point, N. Y., will bring you all the necessary information.

Radio Facility Charts

RIGHT NOW there are 45 separate charts which comprise the radio facility charts covering the entire U. S. These charts are available on a subscription basis for $4.50 per year for a complete set of one each of the 45 RF charts, or at an annual price of 10 cents per chart when ordered in quantities of 20 or more). These charts provided the pilot with complete radio facility information for the U. S., and are essential to cross-country flying. Orders for these charts should be sent to the Director, U. S. Coast and Geodetic Survey, Washington 25, D. C. All subscriptions must be paid for at the time of placing the order. If your plane is equipped with radio and you do extensive cross-country flying, these charts are as necessary to safe operations as a good mech to check your ship. The data the charts supply is similar to that formerly published in Air Navigation Radio Aids, which was discontinued in 1946.

Maintenance Tip

A RECENT LETTER from a fellow Fourth Estater passes on a tip which we'll pass on to you. Writes Dick Hahne of the *Aberdeen-Angus Journal:*

"Here's a little thing for owners of ships having a hinged cowl, with a rod to support the cowling while it is open for check the oil, etc.

"When the line boy checks your oil, it is a good thing to be on hand, or at least take the time to re-open the cowl, make a check and fasten the cowling personally. It does not make one too happy to taxi towards the runway and hear the cowling support rod rattle around simply because some one forget to place it back in the clamp, or to notice that the cowling is not properly placed before locking it down . . . and it saves having to climb out of your ship to do this job before take-off."

CAA Notes

THE YEAR 1947 was one of increases in the number of civil aircraft. According to the Administrator of Civil Aeronautics, registered civil aircraft of the U. S. increased by 13,819 during 1947. The number of civil aircraft, as of January 1, 1948, was 94,821, as against 81,002 just a year ago. California continues to lead the list with 10,221 planes registered; Texas is next with 8,347; and Vermont and New Hampshire have the smallest number, with 187 and 199 registered aircraft respectively. There were 130 helicopters registered in 47, as against 52 in '46.

•

To joggle the memories of flying school operators, the CAA announced recently that operators of CAA-approved flying schools should apply to their local inspectors for renewal of approval certificates at least 60 days before current certificates expire.

Flight schools are certificated for two-year periods, and all existing certificates have been issued since April 30, 1946. First expirations, therefore, will be after April 30th of this year. SO, check on those approval certificates . . . and don't be caught with your approval missing.

•

Word has been received that Thoburn C. Lyon's new commercial edition of "Practical Air Navigation" has been given the nod by Washington authorities. Insomuch as the Gov't's edition of Practical Air Navigation is now obsolete, authorities are returning orders for CAB 24 and suggesting that the buyers get Mr. Lyon's edition, a completely up-to-date textbook on air navigation. Both the beginner pilot and the professional will want this "Practical Air Navigation" by T. C. Lyon. It is definitely a "must" for all pilots. If you want to bring your aeronautical library up to date, write Mr. Lyon at Silver Springs, Maryland for your copy of his air navigation book. By the way, CAB 24 is not only obsolete, it is out of print and, according to reports, will not be reprinted or revised.

Welcome Mats Out

LETTERS from three different airports shows us the welcome mats are out for the X-C airman now that the good flying weather is rolling around.

R. M. Arnold of the Eastport Flying Service, Eastport, Maine, reports his excellent field is a Port of Entry. Facilities there include both U. S. and Canadian clearance and entry depots. And there's no tie-down fee there, either.

From down Georgia way, Julian Young writes us that the Thomasville (Ga.) Municipal Airport has put out a large welcome mat for private and/or executive planes. Concrete runways 5,000 feet long, lights and good hangars, in addition to excellent service and transportation to town are the inducements Thomasville Municipal is offering.

Wings Field is another "friend-of-the-pilots" airport that will continue to make new friends this summer. Located just 13 miles NW of downtown Philadelphia, Wings Field offers 134 useable acres, three runways, airport day markers, wind cone on hangar roof, wind T, lights on EW runway by prearrangement, and 24-hour service. There's a restaurant in the Ad building, too. +++

Save Your Seaplane

(Continued from page 32)

more complete, good corrosion proofing can be done in the field and a landplane can be converted at any time as long as floats are available for that type plane.

With all that in mind we can proceed to the maintenance and proper care of the float jobs down at the water's edge. Mellor-Howard Seaplane Base and Flying School on Overpect Creek at Ridgefield Park, N. J., is run by two enterprising pilot-mechanics named Bill Mellor and John Howard. Having been operators for more than 10 years with over 100,000 hours of water operation behind them, mostly in brackish-type water, they have owned, used and sold practically every type of seaplane and amphibian built for personal use. At present they operate nine Piper *Cubs*, one Cessna 140 and two *Seabees*. On their records and experience these men have learned how to make floatplanes tick right.

As an example of typical operator care it should be remembered that Mellor-Howard is based on a waterway that is only about 5 per cent brackish or saline. Sea water calls for a greater amount of preventive-maintenance. As a matter of fact, even salt water differs in strength according to climate. In tropical and semi-tropical areas, such as Florida's southern coast, the corrosive action is comparatively high, and military type or factory proofing is a practical *must* for long aircraft life.

Primary corrosion proofing will not be discussed since some aspects of it are too technical and involved, but secondary prevention, wherever applicable, will be listed. Common compounds used in this work will be found at the end of the article along with corresponding military and commercial type designations. Further information may be had from the Edo Aircraft Corporation, largest builder of all-metal floats; from the standard aircraft manufacturers who build personal planes, and usually at any dependable seaplane base with past experience in this type of work.

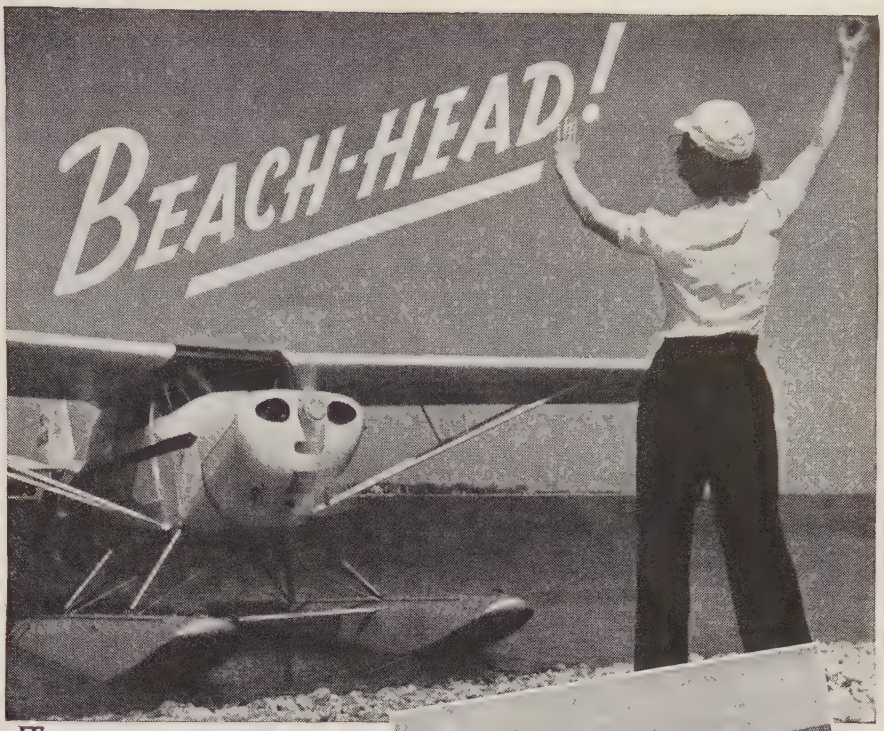
Floats

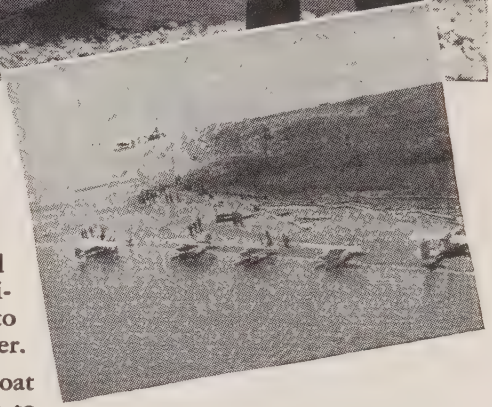
Corrosion on aluminum floats is usually found first around rivets and will show as small white spots. Paint bubbles are sometimes evidence of corrosion working under the paint. When the spots are limited to a small area, they can be eliminated by washing and careful wire brushing and then applying a coat of zinc chromate primer followed by pigmented lacquer.

When corrosion is spread over a wide area, all old paint should be removed, using a good commercial paint remover and careful wire brushing to remove corrosion spots without harming the Alclad. Steel wool should never be used to clean aluminum or magnesium surfaces. After cleaning and washing to remove all traces of the solvent, one coat of zinc chromate primer is sprayed on, followed by two coats of aluminum pigmented lacquer.

Mellor-Howard say that according to their records, with good care metal floats last an average of over 6,000 hours. In addition to checking weekly for leakage and loose rivets, they disassemble, inspect and re-finish

(Continued on page 58)





The pleasure of float flying is even more than the added fun of flying off water. The unlimited size of landing and take-off areas, the freedom from traffic congestion, the tens of thousands of different lakes, bays and waterways, the dust-free cleanliness of water flying add up to make you enjoy float flying better.

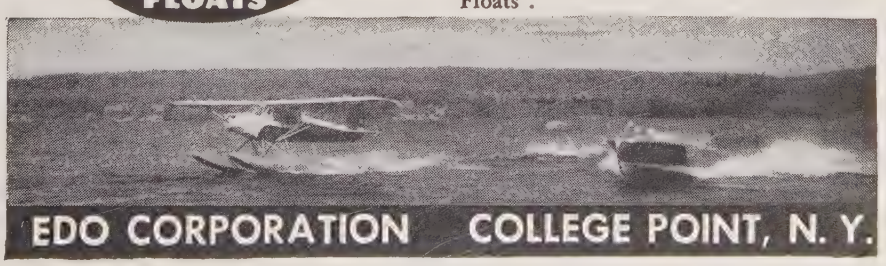
But your real pleasure in float flying comes when you coast up to a secluded shore and "establish your beach-head" for a pleasant picnic, perhaps a swim or a week-end of camping, hunting or fishing. This is *flying at its best.* And on floats you fly with seaplane safety, enjoying the peace of mind which comes only with the knowledge that every lake, stream or bay below is a perfect landing spot and that even an open field is safer for a landing with floats.

Only with floats do you enjoy both this vastly increased pleasure and the added utility of being able to land "down-town" at most large cities whose seaplane bases are often within walking distance of business centers.

LOG SOME FLOAT TIME!

See for yourself how much more pleasant float flying can be. Log some float time with your nearest Edo seaplane operator and see for yourself how Edo floats on your airplane will give you more pleasure and utility. Durable, all-metal Edo floats are easily installed on most personal planes. Write for your copy of "This is the Fun of Flying Floats".

Edo FLOATS



EDO CORPORATION COLLEGE POINT, N. Y.

Fighting Fury

(Continued from page 29)

resembles a high flying bomb with its air intake, engine and fuel tanks enclosed within the fuselage. Wings contribute greatly to the very high speed with their super-thin laminar flow.

As the speed of sound is approached, shock waves give the designers a headache. The *Fury* has a horizontal stabilizer with 10 degrees of dihedral to keep the tail assembly up out of the shock-wave area and increase the stability. This allows a closer approach to the sonic wall with less adverse effect.

The first public appearence of the FJ-1 was at the Aviation Writers Convention at Muroc dry lake last year. It was my fourth flight in the ship, but even then I had the utmost confidence in its abilities. While other jet planes made a series of high-speed "passes" over the visiting writers, I tried to liven up the show a little by throwing in a few acrobatics. With that mile-a-minute rate-of-climb, it was easy to come in over the dry lake and slow-roll up out of sight. Aerobatics in any jet are a pleasure for there is no propeller torque to fight.

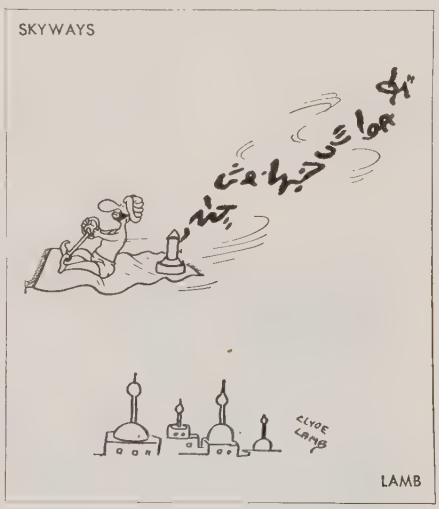
When the first FJ-1's were delivered to the Navy at San Diego, pilots of Squadron "Fighting Five Able" had a field day in breaking records all up and down the Pacific Coast. That type of work, after all, should be reserved for the military pilots since the ships are designed and built for them. When a civilian test pilot makes a fast delivery flight in a military plane, I don't believe that he should try to make an official record because it puts him in competition with men who have made a career of military flying and who should be entitled to the prestige that goes with the job.

This job of being a test pilot is most interesting. When a plane first comes off the drawing boards, a pilot is assigned to follow it through and eventually do the experimental test flying. The designers can caution the test pilot in advance of what new features have never before been tested at high speeds. With a warning of what few features may give trouble, the pilot has less chance of getting into trouble in the air.

Beautiful as she is today, the *Fury* has come close to cashing in my chips more than once, but that's all part of test flying. During spin tests for the Navy at Patuxent, the cockpit canopy blew off and jammed my head against the side of the cockpit. If I hadn't been wearing a heavy Lombard crash helmet, I wouldn't be telling this story today. The only reason I'm sure just what went on is that I had a death-grip on the control stick with the instrument photo-recorder turned on. The chase pilot following in a conventional Navy fighter couldn't catch me as the *Fury* dropped earthward. I finally regained conciousness at 1,400 feet and reefed back on the stick. The instruments recorded 8½ G's and I promptly blacked out again. The chase pilot later said that the *Fury* did two turns of a vertical slow roll and leveled off at 16,000 feet. When I could see again, I headed for the nearest airport but I could tell that it wasn't Patuxent even through the blood on my face. I finally got squared away and flew 30 miles to the Navy base, landed, and was helped into an ambulance by Corpsmen. To this day I can't remember a thing about that flight from the time that the canopy blew off until I came to in the ambulance.

One of the first high-speed dives in the original XFJ-1 pulled all but 15 per cent of the elevators loose and left me sitting there without any control except from the trim-tabs. It was very fortunate that the Muroc test base in the Mojave desert near Los Angeles had so many miles of smooth dry lake for landing, or setting down under those conditions would have been quite a chore. (See "Sky Speedway" in January, 1947, SKYWAYS).

Actually, one of the most unexpected things that have put grey in my hair at 27-years-of-age, occurred during a routine production test flight from the Los Angeles Municipal Airport. I pulled an FJ-1 into the air and the elevator controls jammed full back at 300 feet. I cut the power to bring the nose down and then eased it on again to keep from mushing back into the ground. When you're scared enough, they say that you acquire super-human strength. I guess that's so because I put enough pressure on the stick to free the controls and gingerly came around and landed. When we started checking, we found a riveter's "bucking bar" had jammed ahead of the stick in a small vent hole below the cockpit. The bar had vibrated into this little hole, a 100-to-1 shot, as the plane accelerated for take-off and hadn't turned up in any of the pre-flight control checks on the ship.



The amount of work that goes into one of these new jobs is out of this world. The FJ-1 was originated back in 1944 when the Naval Bureau of Aeronautics decided that carrier-based jets were needed, yet it was four years before the *Fury* was first landed on the carrier *Boxer,* in mid-March of '48.

In those four years some 8,000 individual drawings were made and 4,000 separate parts, not including rivets, were built and assembled. North American records show that it took 44 acres of blueprints and six filing cabinets to handle the "paper work" on the new plane.

When the FJ-1 was in its early stages of construction, an inspection of the mock-up by the Navy resulted in two interesting changes. The inspecting board recommended that control handles be re-shaped to indicate the components they operate; flap handles shaped like miniature flaps and landing gear handles constructed like a small wheel. This board also recommended a separate manual hydraulic pump within the plane to raise and lower the nose wheel.

This nose wheel design is one of the unique features of the FJ-1. To save precious hangar-deck space on an aircraft carrier, the *Fury* will "kneel down" by installing extra wheels on the nose wheel strut and then retracting the nose gear with this hydraulic hand pump. It also enables the jet exhaust during warm-up to be steered above other planes and personnel.

The history of the FJ-1 shows that the first model sat completed on the ground for nearly five months before a powerplant was available. After taxi tests were completed, the first test flights were made in September 1946, but it was 13 months later before the Navy had their first production model at Patuxent where further tests made a good airplane into a good *Navy* airplane.

Now that the *Fury* is well on her way to being a production airplane, my job will change from experimental test flying to ironing out problems that show up with production flying. When the men behind the drawing boards come out with another new design, the cycle repeats.

After he has been in the job for a while, a test pilot frequently wonders "where does it all lead?" Perhaps it is caused by high altitude and high speed, but I find myself watching my reactions more critically as I get older. The most important asset, I believe, in test flying is the correct mental attitude. You've got to have faith in your designers, faith in the construction of the ship, and above all, faith in your own ability to handle those unexpected items that always occur in test flying.

There is risk, certainly. Who knows today what the effect of near-sonic speeds and pressures have on the human body? Just as miners with their sillicosis that no one knew anything about it until this occupational disease showed up years later, we still don't know just what may develop as the result of this type of flying. That's why I collect my better-than-average pay-check with the comment that "a test pilot doesn't make any more money. He just makes it faster."

FJ-1 Data

Performance

Speed — More than 550
Range — More than 1500
Endurance — More than 4 hours
Stalls — About 95 knots
Rate of climb — More than 5000 ft./min.
Highly maneuverable

Characteristics

Weight — 12,500
Fuel Capacity — 205 gallons
Guns — Six 50 caliber
Engine — J35-A5
Axial flow — G. E.-Allison
Dimensions:
Wing span — 38 ft. 1¼ in.
Fuselage length — 34 ft. 6¼ in.
Height — 14 ft. 6 in.

Flight West

(Continued from page 21)

supervise, we dashed for the main administration building to check weather and enjoy a steaming cup of coffee. It was almost zero in St. Louis . . . and I had told Ruth that by evening we would be in Texas, probably walking around in our shirt sleeves. Well, it wasn't getting any warmer, but we still had our tail wind.

Next came Springfield, Missouri, in the heart of the Ozark Mountains. We had come across the Ozarks in record time, looking down on the snow-covered hills, and the curls of smoke streaming out of the chimneys of isolated farm houses. At noon we were seated in the comfortable warmth of the airport restaurant having luncheon, 500 miles from home. The sun was shining, but it still was cold.

The airways weather station at Springfield held no hope for our getting into Tulsa, 150 miles to the southwest. Ceiling 400 feet, visibility two miles, with snow showers . . . and it was moving toward the east—toward us, that is. The prospect of interrupting our journey at this point was a most discouraging thought, and we offered to deviate as much from our planned course as necessary, if only we could keep moving. It was suggested that we might continue directly south to Fort Smith, Arkansas, staying just east of the weather, with the thought that we would be running as close to the front as we could with safety. The chances then were that we could stay overnight in that area, and the front would pass through during the night, leaving us with clearing weather by dawn.

This is exactly what happened, except that we couldn't quite make Fort Smith. About 70 miles north of Fort Smith, the clouds ahead began to lower very fast, and the bottoms were ragged. Snow began to fall. A rather hasty sampling of public opinion in the cabin of our plane resulted in a very prompt and unanimous decision to abandon our direct course and get over on a railroad track about five miles away, and follow it into Fayetteville, Arkansas. Here we landed in the midst of a very heavy snow shower which was rapidly blanketing the ground. Fayetteville is a lovely city, the home of the University of Arkansas. It provided us with a comfortable room in a nice clean hotel, and some of the nicest treatment you could find at any airport anywhere

Next morning the skies had cleared, our ship was waiting for us on the line, spic and span and ready to go, and in a matter of minutes we were climbing out over the hills surrounding Fayetteville en route to Oklahoma City.

Twenty minutes out of Fayetteville, the hills of the Ozarks slid out behind us and the country flattened out. Muskogee, Oklahoma, passed by on our left and very soon we were descending on a beeline for Will Rogers field at Oklahoma City. A large cluster of oil wells just east of the field caught our admiring gazes and while Ruth dreamed of mink coats and whatever women do with oil wells, I remembered to get the wheels down, the prop in low pitch and made a halfway presentable landing.

Funny thing about X-C's, you always seem to pick up more information flying into different airports than you would in a month of Sundays around home base. Here in Oklahoma City I learned something about my own airplane that I had failed to find out in 100 hours of operation. It has been a matter of common knowledge among us *Navion* owners that the gas tanks are sometimes a bit difficult to get absolutely full. This is caused by the fact (at least in models prior to the Ryan *Navion*) that while there are tanks in both the left and right wings, the gas is put into the right wing tank and must then drain over into the left wing tank. By chance conversation with one of the mechanics on the field, I learned that you can always make certain that both tanks are full, by replacing the cap on the right tank after each gassing operation, and blowing into the small air vent which is just forward of the left wing, on the after side of the left cowling. This has the effect of equalizing the pressure in both tanks, and will sometimes allow the addition of as much as six or seven more gallons. Try it, you brother *Navion* owners. I used it on this trip, and it never failed to work.

Our stop at Will Rogers field was all too short, but there were miles to cover and once again we were off into the wild blue yonder, our destination Abilene, Texas. The country now had started to take on that "western look"—and we were both

(Continued on page 53)

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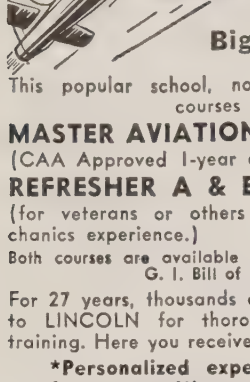

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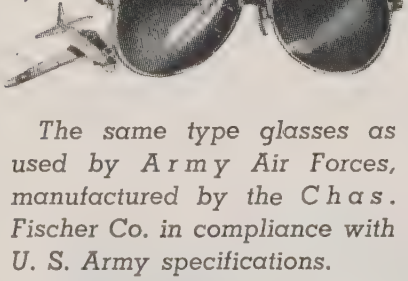

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Ace Racer

(Continued from Page 42)

Howard Hughes was paying pilots $50 per day to fly in 'Hell's Angels'. I was going broke selling airplanes during those depression times, so I came to Hollywood and I've been here ever since."

Mantz made his first headlines while establishing an outside loop record, 46 consecutive gyrations, in a Fleet trainer. Then he sold 15 of the trainers on the strength of the record.

"At that time, said Mantz, "I held the world's record for inverted flying and slow rolls, but I couldn't get a job as a stunt pilot until everyone else turned down an assignment to fly through an open hangar for the film 'Air Mail'. I haven't been out of work since."

Jimmy Doolittle taught Mantz how to do low-altitude loops by having him practice atop an overcast until he could complete the maneuvers without once touching the clouds.

Mantz was a great friend of the late Amelia Earhart. In 1935 he flew as her copilot in the Bendix dash and the pair finished a leisurely jaunt in a Lockheed *Vega* to take 5th place. The $500 prize money paid for their gasoline. Mantz was technical advisor for the famed aviatrix on her many record-breaking flights and cautioned her against making her ill-fated South Pacific trip.

Mantz, too, had a taste of over-water flying when he made four North Atlantic crossing in 1942, ferrying bombers to the British. He later served in the Air Forces as a Lt. Colonel in charge of flying for training films.

Latest aviation venture for Mantz has been the purchase of a Bell helicopter named "Tom Mix" in honor of the first passenger Paul ever flew. The helicopter is doing a land office business as a movable platform for motion picture cameras where unusual effects in complicated traveling scenes may now be shown on the screen for the first time. Mantz helped design a $3,000 vibration-proof camera mount for the helicopter. Before he purchased the Bell Helicopter, Mantz canvassed the movie studios and explained the possibilities of this new camera technique to directors and producers. Only when he had contracted for enough work to assure that the helicopter would pay for itself, did Mantz purchase the new machine.

The Mantz organization can work fast when the need arises. Early in 1948 a murder was committed in Bakersfield, 112 airline miles north of Los Angeles. A photographer had obtained exclusive on-the-spot pictures that were urgently needed at the office of a large Los Angeles newspaper. The City Editor called Mantz and a Lockheed 12 was dispatched from Burbank while the photographer was on his way to the Bakersfield Airport. A sheriff's car was slated to pick up the plates from the plane and rush them nearly 15 miles through heavy traffic to the publishing plant. To save time, Mantz warmed up the helicopter and picked up the films from the Lockheed as soon as it landed. He flew across downtown Los Angeles and landed in an unused circus lot within a few blocks of the newspaper office where a reporter picked up the negatives. Total time from Bakersfield to the downtown news plant was only 38 minutes.

When the 'copter is not out on a job Mantz uses it as an aerial taxi between the airport and the various motion picture studios. He lands in the parking lots, transacts his business at the studio, and then hops back to the office.

He has even taken the helicopter to the corner drive-in barbecue stand, two miles from his office, for a coke and hamburger during a rushed day. The parking lot serves as an ideal "heli-port."

When the helicopter is not available Mantz looks over his fleet of planes and takes whatever is available for the 45-mile trip to his beach home at Balboa Island. The trip is almost impossible by auto during rush hours along the jammed, sprawling street adjoining Los Angeles.

"I've flown to Balboa Island in almost every type of plane I own," said Mantz with a grin. "I've taken our slow L-1-A camera ship, the Cessnas, BT's and the Douglas DC-3. I've even flown home in the P-51. It took me six minutes to get over the nearby Orange County Airport in the *Mustang* and I circled for 30 minutes before the *Cubs* and *Aeroncas* moved out of the pattern so I could land."

Even the younger generation of Mantzes are carrying on in flying. Roy, 20, is slated for Navy flight training, and Paul Jr., aged 9, is yet a little too young to do much flying, but Mantz's daughter Tenita soloed a *Cub Cruiser* on her 16th birthday and also received both her radio operator's permit and auto driver's license the same day.

When asked what his hobby was, Mantz promptly answered, "Why, flying, of course." Perhaps that's why he arrives at the office between 6 and 7 AM on the days he is in Hollywood. The famed pilot finally admitted the earth-bound hobby of designing indoor barbecue pits. He collects guns and considers it a perfect day when he can take his family out in a speedboat and shoot at bottles thrown into the water.

Like everyone else in Hollywood, Mantz has many big plans for the future. He is president of the newly-formed "Weath-Air Inc.," and has a surplus Navy TBM and a modified B-25 now being refitted with hoppers for dry ice, silver iodide and water for "rain making" experiments.

Still looking ahead, Mantz recently purchased a surplus PBY, twin-engined amphibian. He is rebuilding it into a luxury liner for long cruises. The big boat will be ideal for hunting and fishing trips when equipped with a barbecue galley and a deep freeze unit. First trip scheduled for the amphibian is a jaunt to Tahiti with producer Korda to look over location sites.

"I enjoy motion picture flying," concluded Mantz as he ground out the ashes of his cigar. "But don't call it stunt flying. It's precision flying; it had better be if I want to keep my neck in one piece."

Ignoring the final clatter of the overworked desk phone, Albert Paul Mantz straightened his brilliant tie, buttoned his checkered sport coat, combed his thinning black hair and headed for another lucrative conference with studio executives.

Flight West

(Continued from page 51)

enthralled by this constantly changing panorama that the magic of the airplane was unfolding before us. Truly we were lucky to have two front-row seats to the greatest show on earth—the universe in all its majesty and vastness, unwinding and revealing itself before our very eyes.

A routine weather sequence came over the radio announcing that Abilene had a ceiling of 1,400 feet, visibility eight miles with a freezing drizzle. As we were then approaching Wichita Falls, Texas, good judgment required that we land there and determine the exact situation before proceeding the additional 125 miles into Abilene. We waited about an hour, during which time the reports remained about the same, and we decided that the only sensible thing to do was to phone the airways weather station at Abilene and clarify the situation in our own minds. We learned that the ceiling and visibility would remain the same for several hours, the temperature was 24 degrees and the drizzle was very light. It was caused by a temperature inversion, meaning there was warm moist air in the base of the clouds, and the moisture was condensing out by contact with the lower cold air. We were further advised that it was a local condition which would probably get no better nor any worse, that the drizzle was extremely light and that we could undoubtedly proceed to Abilene without any great difficulty.

Armed with this information, we flew out the south leg of the Wichita Falls radio range. About 40 miles north of Abilene, the windshield started to take on a blurry coat. Ice! I looked out at the leading edges of the wings. That bright shine had given way to a gun-metal grey. Yes, it was definitely ice, but still light. It would bear watching. Before leaving Wichita Falls, I had carefully marked two fields approximately 20 miles this side of our destination, just in case. True, the windshield was getting worse, but only over the center portion and it was still possible to see out the left side of it. By now, however, we had passed our alternate airports and Abilene Municipal was only about 18 miles away. I tuned Abilene radio, switched on to the directional loop and decided to go on. A few minutes later the field came into view and in two shakes we were down. Ruth was actually singing the last few miles into Abilene. I don't remember the tune, but the words seemed to go "Why, Oh Why, Did I Ever Leave Chicago?" Anyway, it was something like that.

Texas is a wonderful state. To say that it is large would be an understatement, and the people are friendly and hospitable. I say this about the people of Texas because we got to know them better—and all this came about because we were there longer. My reputation for attracting bad weather would qualify me as Chief Rainmaker in any state of the U. S. But if its only rain you want, avoid me like the plague. The sort of stuff I produce is ridiculous. During the war a great majority of our pilot training was carried on in Texas because of very high percentage of sunshine and clear skies there. Well, I fixed that one when we arrived in town on Sunday afternoon, January 25. Old Mother Nature came up with the worst ice storm in the history of the State. Nuff said. We were there for two days, had lots of fun, met a lot of people and, I still insist, were able to resume our journey several days ahead of the people travelling in automobills and buses. They could not travel over roads covered with sheets of glaze ice.

Wednesday morning, January 28, dawned clear and cold. Abilene airport had been closed for two days due to the dangerous and slippery condition of the field. Fortunately our ship had been in a hangar and we were set to go. Four airliners and several Navy ships which had been tied down outside were covered with a blanket of ice at least one inch thick and I knew that they were not going any place until the weather warmed up enough to melt their wintry coat.

We taxied out over a solid sheet of glazed runway, the tower cleared us for take off—and away we went, racing down the icy path, taking care to maintain a heading directly into the wind. From here on west the country was starting to rise, slowly and gradually, but still flat as a table top. Over Big Spring and into Wink, Texas to take on gas for the next hop through the famous Guadalupe Pass into El Paso, Texas.

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(Continued on page 55)

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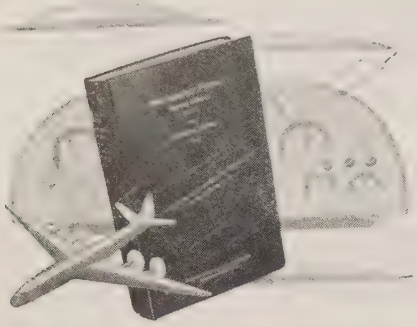

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AIR NEWS

U. S. NAVY ORDERS P-80'S

The United States Navy has ordered 50 Lockheed P-80's for special assignment to units where the Navy's top fighter pilots are getting jet combat training. First units of the $5,000,000 order are scheduled for immediate delivery. The Navy's version of the P-80 will be designated TO-1, and the bulk of the order will be assigned West Coast Navy and Marine operational units for use as standard jet transitional trainers.

AIRCOOLED MOTORS, INC.

Word has been received that Aircooled Motors, Inc., Syracuse, N. Y., manufacturers of Franklin aircraft engines, has been purchased by the Tucker Corp., of Chicago. Officials of Tucker announce that in addition to the aircraft program, Aircooled Motors will build 100 water-cooled engines a day for the new Tucker car.

CONSTITUTION

Recent flight tests, undertaken by Lockheed Aircraft, have demonstrated that the 180-passenger Lockheed *Constitution* can use airports that are now serving domestic and international air travel. It was proved that the *Constitution* can land and take-off in the same distance as normally required by standard twin-engine transports—CAA Class 4 airports (include all those fields having runways from 4500 to 5500 feet long. CAA airports listings run all the way to Class 9, fields having runways 10,500 feet long). The *Constitution* at its present top weight of 184,000 pounds, will take off in 2,350 feet and clear a 50-foot obstacle in 4,320 feet from a standing start at sea level. At its maximum landing weight of 160,000 pounds, the *Constitution* can land over a 50-foot obstacle and stop in 2,300 feet.

NEW "PACK" PLANE

The Fairchild Engine and Airplane Co. has received a contract for the development of a "pack plane." The pack consists of a stream-lined container, with a capacity of 2,900 cubic feet and a gross weight of nine tons, which is attached to the basic airplane by means of quick-detachable fittings. The airplane itself consists only of wing, empennage, power plants and flight deck. In shuttle service, the C-120 (official designation of the Pack Plane) would permit the air delivery of ammunition and supplies, and on the return trip the evacuation of wounded in the portable "pack" ambulance section.

HERE AND THERE . . .

The 5,000-hp turboprop engine, T-35, by Wright is now in quantity production. Wright Aeronautical has not as yet divulged specific installations . . . Lear, Inc. has received a quantity contract for the C-2 Electro-pilot from the Air Force . . . General Electric has been awarded a contract for turbo-superchargers, armament systems and other equipment for the Boeing B-50's . . . Ryan Aeronautical Co., of San Diego, has been awarded CAA Production Certificate #603. This covers the manufacture of the 1948 Navion . . . Atlantic Aviation has announced that it is expanding its facilities to airports at Baltimore and Wilmington, Delaware. New hangers are being built to meet service needs as Baltimore Municipal Airport and at New Castle County Airport . . . The AC Spark Plug Division of General Motors Corporation has come out with a new aviation spark plug. It is recommended by Pratt & Whitney for use in Hornet E-3, *Twin Wasp* C, *Twin Wasp* D, *Double Wasp* and *Wasp Major* . . . Word from McDowell Manufacturing Company reports several improvements in its new McDowell Model D Safety Starter, recently developed by McDowell. The starter is built for lightplanes and eliminates the hazards of spinning a prop by hand. According to McDowell officials, a trade-in plan has been developed whereby an old McDowell starter may be traded in on the new model for $4.75 . . . The Line Material Company, Airport Lighting Division, has released a new bulletin on their Bartow Type 36" Spherical Rotating Beacon for Class 4, 5, 6 and 7 airports. A letter to Line Material Company, East Stroudsburg, Pennsylvania, will bring you this new catalogue.

PERSONNEL:

J. Carlton Ward, Jr. was elected Chairman of the Board of Directors of the Fairchild Engine and Airplane Corporation at its recent meeting. At the same time the Board elected Lawrence B. Richardson, formerly vice president of Curtiss-Wright, to succeed Mr. Ward as Fairchild president.

E. Van Vechten has been appointed General Operations Manager of Pacific Airmotive Corporation. Mr. Van Vechten will also retain his present duties as Director of Procurement and Material.

O. B. Wilson has been named industrial manager for the eastern sales region of the Brown Instrument Division of Minneapolis-Honeywell Regulator Company.

George Herrick, former technical editor of Air Transport, has been appointed director of public relations in the U. S. for SABENA Belgium Airlines.

Harold Jones, Los Angeles attorney, was confirmed by the Senate, without opposition, for membership on the Civil Aeronautics Board.

John G. McKean has been appointed Treasurer of Pacific Airmotive Corporation.

Flight West

(Continued from page 53)

It is the lowest point (elevation 5,506 feet) in the Guadalupe Mountain range, lies 100 miles due west of Wink, Texas, and 80 miles east of El Paso, and the airway runs right through it. The terrain beneath you is not at all bad, and 20 miles as the crow flies should see you on the other side. The only cantankerous thing about Guadalupe Pass is the weather. It seems to be the dividing line between two different climatic belts and you can surmise the result. It can open up to clear and unlimited and close down to zero-zero alternately several times a day; winds can vary from breezes as gentle as a zephyr to winds of gale intensity.

On the day we went through, Wink was clear and El Paso was reporting unlimited ceiling and visibility 50 miles. The Pass was reporting zero-zero. As we stood in the weather station at Wink pondering this strange condition, an east-bound airliner reported over the range station and informed us that it was a purely local condition consisting of one small cloud lying at the base of the Pass, and that all else was clear.

Five minutes later we were climbing to the west bathed in brilliant sunshine and filling our lungs with the clear dry air of the golden west. At 8,000 feet we were already looking at the Pass and the regal grandeur of the country which lay beyond. As we went through the Pass one small cloud about a city block in length was sitting right on top of the weather station and the radio was still giving out with "Guadalupe Pass, ceiling and visibility zero."

Think what the location of that weather station is doing to the lives of the operators.

A tank of gas, a quart of oil, a friendly goodbye from the attendant at El Paso Municipal field, and the homes and buildings of that beautiful western metropolis faded out behind us. Our next scheduled stop was Tucson, Arizona, 278 miles to the west. On this leg, we crossed the highest mountains of the whole trip—the Chochise Range. Skyway Number One would have taken us a bit south, down through Douglas, Arizona where the country is lower, but Ruth had fallen in love with mountains by this time and the way was clear.

At 10,000 feet, the sky was bluer than I had ever seen it and we were looking at mountain peaks which must have been 200 miles away. This was nature in all her glory, and the sheer beauty of it was awe inspiring. We sat there in silence. It does something to you.

Tucson looked small, but we were pretty high. A long glide from miles out, a final turn in, and we found ourselves shedding sweaters while the last few drops of gasoline were pumped aboard.

About an hour later Camelback Mountain moved gently past our right wing and we were settling onto one of the long paved strips at Sky Harbor Airport in Phoenix. Mike Mitchell who instructed for the Army and Martha Wilkins who flew for the Wasps operate the Sky Harbor Air Service on the field. While we relaxed in that famous Valley of the Sun for a couple of days, their organization gave us a complete engine check,

(Continued on page 57)

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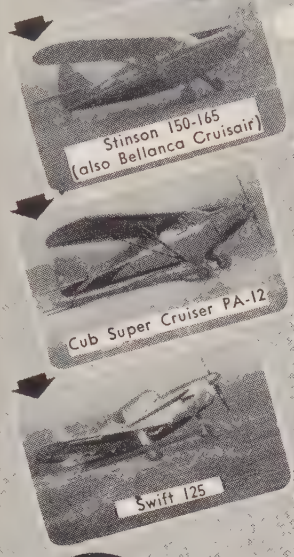

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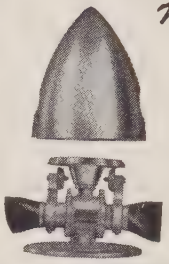

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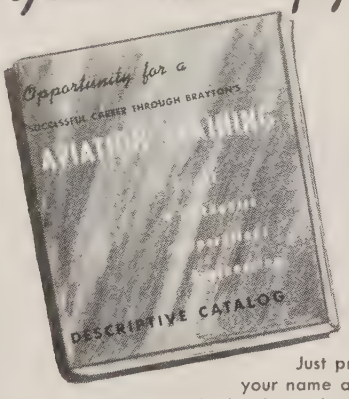

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One-Way Mission

(Continued from Page 44)

These fighting forces are indispensable and come first in time, but in a sense they are auxiliary to the construction and supply forces which must immediately prepare the bases for offensive use. The key unit is the engineers who must build the runways.

Considering the time element, their job looks insuperable. In terms of the Guam and Tinian operation, it is; but if we exploit our latest technical developments, we can greatly reduce their burden.

The difficulty of their job in the Marianas resulted not only from the tremendous weight of the B-29's, but more critically from the concentration of this load on two dual wheels. These wheels would cut through the concrete pavement of our best highways. Only the strongest of our municipal airports can support them. What our ablest contractors cannot do in this country without months or years of work, the aviation engineers cannot do at an outpost overnight.

Fortunately, there is help. If you spread the wheel-load, you make it less intense. That, in fact, is all that the thickest pavement can do—spread the load enough so that the soft ground under the pavement will not give way. Why can't the landing gear itself spread the load?

It can. Two generations ago, makers of farm machinery devised a means of moving their equipment over soft ground. This developed into what we know as the crawler track used on tractors and tanks. For a long time, it was thought impracticable to apply this principle to airplanes because of the speed of landing and the limitation on weight. Recently, however, a cleverly designed crawler-type landing gear has been successfully used on an A-20 airplane enabling it to land and take off on sand and mud which would have immobilized or wrecked a standard airplane. Similar gear is being installed on larger planes, and the indication is that the heavier the plane is, the more economical the gear will be.

Nor is this the only possible solution. For some conditions, multiple wheels may be best; for others, skis.

This will not eliminate the need for runway construction, for a strategic aircraft must still land and take off with a heavy load at high speed. It will require two miles of level, firm ground as hard as the average county road and considerably more smooth. In most places, this will be a major construction job. What the new landing gear can eliminate is dozens of shiploads of cement or asphalt and many months of labor. At best, it will make the difference between an impossible and a possible task.

The aviation engineers still have a huge and complicated job to do. If the operation is entirely air-borne, as it may often be, they must so plan that the first to arrive will have sufficient tools to prepare the ground for the next wave, which may come in heavier aircraft; and that these, in turn, will have tools to prepare for the next. Only in this manner will it be possible to build runways for strategic bombers.

But what of the first wave? They must land in gliders or in light airplanes on unprepared ground. What will they carry? During the recent war, a set of so-called "air-borne engineer equipment" was devised for this purpose. While it was brilliantly conceived, this equipment was so limited by its transportation requirements that it was ineffective after it arrived. We need tractors in the 70-hp class, but light enough to be carried in assault aircraft. So far, there has not been enough money available to develop such equipment—research funds have been cut to the minimum necessary for weapons, and we have had to depend entirely upon commercial developments. We have to choose between something that cannot be delivered by airplane and something that is of no use after it is delivered.

The personnel situation is not much better. The present number of battalions organized is below the minimum requirements for even the present skeletonized air force; and the battalions are only half filled. Still worse, the men are only half-trained.

After all, Colonel Smith may be right. If war were to start today, we might have no better choice than to send thousands of our best young men into "one-way combat" in the pious hope that they could bomb the enemy into submission with a single attack. But if there is still some time, as we all fervently hope, we can hardly use it better than in vigorous preparation.

Our effort should be divided into three phases: for the distant future, guided missiles and the push-button; for the intermediate period, *very* long-range bombers; for the present, our present equipment, including atomic bombs.

For the distant period, we must trust largely to our scientists and give them the means to do their work. How fast they develop the new weapons depends upon how much we give them to work with; and without meaning to suggest an armaments race, it cannot be denied that the country whose scientists have the best support will be the best prepared.

For the intermediate period, we must depend mainly upon the aviation industry by giving it contracts for the production of aircraft in sufficient quantity to keep it alive.

For the present, we need to equip our aircraft with landing gear that will permit them to land on hastily prepared airfields; we need engineers to prepare the airfields; we need task forces to secure them. We must also make every effort within the bounds of diplomacy to obtain the use of strategic areas so as to save time and lives in the establishing of bases.

These things we must have for the present, but they will not be wasted in the future. Even if we had planes with a range of 24,000 miles, or missiles with a range of 12,000 miles, advanced bases would greatly increase our strength. By decreasing the distance to the target, they would increase the bomb load our aircraft could carry and improve the power and accuracy of our guided missiles. At the same time, our possession of these bases would deny them to the enemy, who might use them against us.

This, then, is the alternative. We can make the effort now, use common sense and make a sound preparation for war, or we can wait for war to come upon us—and choose suicide.

Flight West

(Continued from page 55)

fresh oil and, just for a going away present, a beautiful wash and polish job. We lifted a bright and gleaming *Navion* off the runway and headed west for the great city of Los Angeles and the Lockheed Air Terminal.

The most direct route would have taken us over Blythe. However, we wanted to see the Imperial Valley and the Salton Sea (245 feet below sea level), and therefore set our course for Yuma. From Yuma we swung north and west over Palm Springs, that veritable garden of Eden in the United States, crossed the mountains through the San Bernardino Pass at Banning, passed directly over Pasadena, descending to the air terminal at Burbank. This is the home field of Pacific Air-motive, and no two travellers could have been made more welcome. My hat is off to Mr. Carroll and Mr. Seaverns for a swell job of contributing to the comfort and convenience of flying.

At the time of our arrival, California had been suffering from a dought which was then in its 57th week. Two hours later the heavens opened and almost three inches of rain fell in the next 30 hours. But I was glad to do it. They needed it badly and, besides, I like California.

Well, here we are at this point, and I haven't even begun to tell you about all the fun we had. We covered California literally and figuratively; south along the coast to San Diego and beautiful Coronado; north to Santa Barbara, inland to Santa Maria, landing at Hancock Field, now operated by the University of Southern California; up the valley over Salinas and into Monterey and lovely Carmel-by-the-Sea; from there through the Santa Clara Valley and over San Jose into Palo Alto, just 40 miles south of San Francisco, and the home of Leland Stanford University. In one hour of flight we saw the desert, with its baking sun, high mountains with deep snow and people skiing, green fertile valleys under cultivation, and the deep blue Pacific Ocean.

Neither time, nor space, will allow me to tell you more. We returned to Phoenix (this time via Blythe) for six days of desert sunshine, and then reluctantly lifted our wheels off the sun-baked runways of this paradise of the southwest, to return to the ice and snow. The return voyage from Phoenix to Chicago took us 12 hours and 50 minutes flying time. We left Phoenix on Saturday, February 14, and flew to Abilene, Texas, where we spent the night. The next day we latched onto a beautiful tail wind and sat down at Palwaukee Airport, our home field, just northwest of Chicago, exactly six hours and 20 minutes flying time from Abilene. We had been away from Chicago for three weeks and one day.

If you've borne with me this far, maybe you've captured a little of the spirit of what we did on this trip and what it did to us. Maybe the spirit of the love of adventure lies dormant in all of us, even in this work-a-day world, or perhaps it is a love for the beauty of nature which only the airplane can exhibit in all its true magnificence. Try it yourself and you'll understand.

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Save Your Seaplane

(Continued from page 49)

the entire float gear on each of their planes every 500 hours. All old paint is removed, the floats cleaned and then two coats of primer and three top coats of pigmented lacquer are applied. Although this exceeds the manufacturer's recommendations, Mellor-Howard believe it pays off in longer life.

As far as damage and general repair is concerned, the floats are ruggedly built and careless handling is the most frequent cause of trouble. On metal floats without bow bumpers dents from banging into docks may look ugly but as long as they don't leak and the rivets are not loosened they are best left alone. Edo emphasizes that dents on the bottom of the float forward of the step are critical and should be hammered out carefully when found. As to other float parts, Mellor-Howard found that the only trouble with cross-bracing wires, even when correctly tightened, came on excessively hard landings and then it was the attaching piece at the spreader bar that cracked rather than the wire. Over-tightening also will cause this condition. New type floats are being made for some planes without cross-bracing, but these in turn require checks at other stress points.

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Engines

Opinion has been that seaplane engines will always overheat while taxiing, thus shortening engine life. Bill Mellor says that according to his records, although the engines do run hotter there is no noticeable effect on time between overhauls. For exterior care he recommends a kerosene spray with a flit gun once a week on the cylinder barrels, cooling fins and push-rod housings no matter what type of protective coating they have. Some salt water operators use this procedure daily.

Mellor-Howard operating practice has been to change oil every 25 to 30 hours without fail. Their engines usually average about 450 hours between top overhauls and approximately 1,100 hours between major overhauls. Engine mounts which are only primer coated have to be sanded and re-primed at least every three months, although engine change makes the best time for this. Exhaust stacks, if not metallized, should be painted whenever the exterior condition warrants, since exhaust heat and gases do almost as much damage as outside corrosion influences.

Propellers

Seaplane operation is tough on propellers. The average wood propeller becomes rough after about 300 hours, due to deterioration of the protective finish and loosening of the metal sheath. Cracks in the sheath may show before roughness is apparent in the cockpit. Re-finishing and re-balancing is the only cure, but when aircraft are stored at night, if propellers are left in a horizontal position to prevent moisture from settling in the lower blade tip, propeller time is increased.

Metal propellers are not as susceptible, but they become pitted at the tips and leading edges after about 300 hours and require etching and re-finishing. A nightly rubdown with light oil helps preserve the surface and inhibit corrosion.

Controllable props require close checking for adequate lubrication and on seaplanes and amphibians the Mellor-Howard period is every 10 hours. Whenever the propeller on the *Seabee*, for instance, doesn't give full rpm, a hub lube job usually clears up the difficulty.

Wings and Wing Struts

Fabric-covered airplanes require careful checking for corrosion at pocket points where fabric holds moisture against interior structure, whether wood or metal. On planes like the Piper *Cub* which have control cables on the wing struts, most strut corrosion is caused after the paint is chipped away by the cables slapping against the struts in flight. Mellor-Howard places friction tape on the aileron control cables about every 14 inches, keeping it clear of fairleads to prevent possible binding. Even with this caution the wing struts usually have to be repainted every 400 hours. As a general tip for any pigmented lacquer or painted surface, if corrosion is suspected press the paint with the ball of the thumb and if corrosion is present underneath the paint will flake off when the finger is pulled away. When repainting, the struts should be sanded, then cleaned and given one coat of primer and a top coat of pigmented lacquer.

Fuselage

The fuselage, especially the aft underside near the tail, receives most of the spray and backwash of water on take-offs and landings. Even on planes that have been factory proofed, periodic interior inspections must be made carefully. On fabric-covered fuselages the fabric usually has to be opened to check the conditions of the lower longerons. If the metal structure has not been factory metallized, the Mellor-Howard outfit has found that on its planes the tubing must be primed and painted about every five months. The longest period that should be allowed between checks is one year, making the annual the logical inspection for planes not receiving much use.

All-metal fuselages have to be checked from the interior and through inspection ports as carefully as possible. Corrosion points have to be cleaned and sprayed with primer. Fuselage exteriors, if unpainted aluminum, are usually sprayed with clear lacquer. Corrosion spots can be seen easily, especially around rivet heads and at frayed or lapped joints. Brushing, cleaning and respraying with clear lacquer is the only corrective action. In severe cases new rivets may have to be installed to play safe.

Control Cables and Hardware

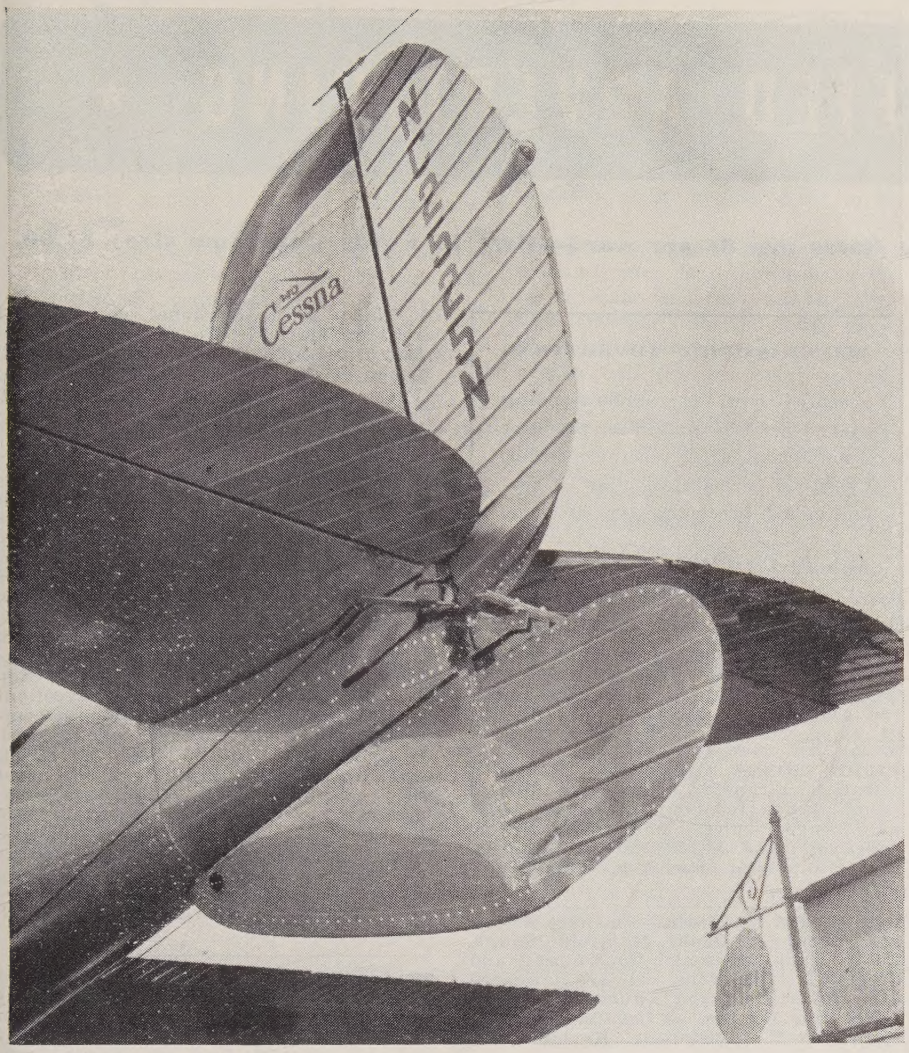
Stainless steel control cables are to be preferred on seaplanes since they need no extra protection, but corrosion resistant or tinned steel cables should have a thin rubbed coat of paralketone or similar rust-preventive compound applied at periodic inspections. Broken strands in cables call for close inspection since they deteriorate faster on floatplanes. All standard steel hardware, including control hinges, should be covered with a brush coat of paralketone at all times. Exposed threads are very sensitive to corrosion and new hardware installations should be assembled with wet zinc chromate primer and threadlube on threads, then covered with the paralketone after installation.

Empennage

The tail section of the plane takes the worst beating from water during taxiing. All tab, elevator and hinges must have on a coating of paralketone at all times to prevent possible freezing from hidden rust or corrosion. John Howard suggests that floatplanes should have a means of pressure lubing movable parts in tail groups, especially on planes with worm gears for adjustable stabilizers and trim tabs. The simple oiling arrangement for stabilizer bearing surfaces on one commonly used floatplane is not sufficient to keep it from rust and corrosion-freezing after as little as 100 hours operation in many cases.

General Cleaning

Starting at the outside and working in, all seaplanes at Mellor-Howard are thoroughly cleaned externally once a week. A mixture of eight parts of kerosene to one part of Gunk is applied with soft brushes and then flushed with *fresh* water. The interior, especially the tail cone, is flushed once weekly with fresh water only. After washing, all control surface hinges should be sprayed with light oil from a flit gun



AUXILIARY FIN is necessary equipment on most floatplanes to insure directional stability. Care should be taken to keep fin from damage like this on fin of Cessna 140

even though they may seem to be completely protected by paralketone.

Sea-water operation demands a much more stringent schedule. The planes should be washed at least once daily with fresh water to remove salt deposits left by spray and then oil applied to hinges.

Washing operations should be performed as often as deemed necessary no matter what type of water the plane is operated from.

General Information

One of the peculiarities of floatplane operation is that sensitive cockpit installations seem to stand up better than they do in landplanes. Instruments have a longer life and there is less cockpit vibration and shock on landings as long as engines and propellers are maintained properly.

Mellor-Howard has found that rope used for mooring has a bad habit of rotting and breaking when least suspected so now the base uses ordinary control cable with a harness snap attached at one end to hold planes to their piers. Fuel servicing hoses with flexible nozzles will end bending, cracking and other damage to fuselage fuel tanks caused by rigid nozzles. Servicing a plane from the vantage point of the floats is an awkward operation at best except for very tall persons.

Float flying has many advantages over wheeled operations, as the nearest water enthusiast will tell you, but just as for any other planes, good maintenance makes it less expensive and safer in the long run.

MATERIALS USED IN CORROSION PROOFING AND MAINTENANCE:

Zinch Chromate Primer, Spec. AN-TT-P-656. For spraying, mix one part primer with two to two and one-half parts Toluol (Toluene) Substitute, Spc. AN-T-8B.

Paralketone 9 (or equivalent), Spec. AN-C-52A Type I. May be applied by dip, spray or brush between 40 degrees and 90 degrees F. CAUTION: The flash point of this material is 100 degrees F. and it should never be heated over an open flame.

Aluminum Pigmented Lacquer is a mixture of Clear Lacquer, Spec. AN-L-29; reduced with Cellulose Nitrate Dope and Lacquer Thinner, Spec. AN-TT-T-256; pigmented with Aluminum Paste, Spec. AN-TT-A-461-A1. Spraying mixture is one part clear lacquer to one or one and one-half parts lacquer thinner with 12 ounces of Aluminum paste by weight.

Clear Lacquer, for exteriors of metal surfaces. Edo Aircraft recommends commercial types similar to Du Pont Methacrylate No. 1234 Clear Lacquer.

Check That 'Chute

(Continued from page 36)

have opened if a pilot had needed it. Don't be afraid to report a suspicious looking 'chute. Give the next guy a break.

Everyone has had trouble putting on a 'chute. Evidence of this is one of Joe Crane's biggest gripes—the condition of the adjustment straps on 'chutes he receives for repacking, especially those from schools. They look like a big man had tried to make the 'chute larger, had gotten stuck on one of the adjustment straps and given up. Then a smaller man comes along and tries to make the straps smaller. He changes them some more, but not equally. Consequently the risers are all out of line. Joe's advice is to adjust only the leg straps, and try to find a 'chute that's large enough without a lot of readjustment.

As to handling a 'chute—*don't carry it by the rip cord!* Use the harness webbing that normally carries the weight when a 'chute is worn. The rip cord handle fits in a pocket and should stay there until its needed. Either wear the 'chute, or carry it by the leg straps.

When not being used, parachutes should be stored in a dry place *away* from sunlight. When you're through with a 'chute, if there isn't a rack to put it in, make doubly certain it's put into the carrying bag that came with it. If a 'chute is to be stored for a long period, it should be put in a box or locker; the rip cord should be pulled and the canopy opened up; and naphthalene flakes should then be scattered around. They prevent mold.

If you're thinking of buying a surplus primary trainer, and want a parachute too, you'll probably want the seat pack. It's used in service ships because of the bucket seats. You can put cushions on the seat, of course, and use a back pack, which many pilots find more comfortable than the seat arrangement. As to cost—parachutes range (surplus), from $50.00 up. New ones from $150.00 to $225.00, so you see they're expensive items that must be taken care of. Surplus parachutes are okay, but be sure you buy from a reputable rigger or parachute company, and in any case, make certain it's inspected and approved.

Ordinarily, 'chutes can be rented for about 50 cents a hop. The 60-day inspection costs around $5.00, and many riggers store 'chutes for a very small monthly sum during the off-season months. They all keep track of the inspection dates, and notify the owner when it's time for another look-see.

The pilot who has never worn a 'chute wants to remember that it changes his reference point on the nose of the plane. Particularly in the lightplanes — the *Cub* or Aeronca—there's a tendency to raise the nose slightly. This can be prevented by checking the wing tips on the horizon (which is the proper way to check for straight-and-level flight anyway).

One last word of caution from Mr. Crane. "If they're going to wear it, they ought to put it on." Too many pilots figure they will snap the 'chute on, if and when they need it. Take the advice of a man who's made 668 parachute jumps. If you've got it with you, wear it!

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NEW K-1 summer flying suits made of durable byrdcloth with nine zippered pockets, $10.00. R.A.F. Manufacturing Company, 6 East Lake St., Chicago 1, Illinois. Buy direct and save.

Report on Mexico

(Continued from page 27)

plane requires too long a take-off run—depending on how you look at it. Sun and rain have begun their ravages.

Before going into details relating to civil aviation locally, a justified criticism must be expressed regarding the indifference and lack of present or future planning on the part of responsible officials for this important nucleus of aviation progress. Civil aviation in Mexico, like Topsy, 'jest growed" by itself and does the best it can to teach and enjoy flying while being kicked from paved runways to muddy strips, or while being ignored and seldom helped by the members of the local bureaucracy.

Four years ago civilian pilots had a hangar to themselves and paid rent to the Department. Then the commercial airlines began to expand and the hangar (fast becoming insufficient for the growing number of planes), was unroofed and remains so to this day. Private plane owners were forced to shift for themselves. At that time also, the *Cubs,* Taylorcrafts, etc., shared the runway with the incoming DC's and hot-landing military planes. Whereupon the commercial lines began to exert pressure and civilian activities were moved to a spot in the middle of the field where an additional runway had been built. A muddy field to cross, with lake-bed silt up to the hub caps, took some of the edge off the enthusiasm for flying, while the beach umbrellas and huddled cars gave an oasis-like effect to guide the incoming planes.

Today civilian activities, with the exception of a new field now being developed on the old lake bed of Texcoco, is, for the most part, confined to a narrow strip far to the East which measures one kilometer long (3,047 feet), by 50 meters wide (152 feet), including mud holes. Here in Mexico City take-off altitude is officially computed at 7,300 feet, which means there is little space left to spare before lifting a ship off the ground!

Service facilities for engine or fuselage repair for private planes have been, in the past, a haphazard arrangement. Now trained mechanics are being graduated from both Army and civilian schools. The situation is improving and will achieve real progress as new hangar facilities are installed. Aero Servicio, S. A. (Inc.), a private company, is completing excellent installations for storage and all types of repair work, in a series of spacious hangars and shops to the North of Balbuena Field (official designation of Mexico City Airport).

Throughout the Republic there are 380 private planes in use, according to official figures. Of this number around 50 use the field referred to above, while the balance are based in such cities as Guadalajara, Puebla, Monterrey. Torreon, Durango, Vera Cruz, Tampico, etc.

In commenting upon the relatively small number of private planes based at Mexico City, it should be remembered that this is the capital of the Republic with an urban population of more than two million and representing 10 per cent of the total population of the country. Here, too, is amassed the wealth and culture and educational facilities, not to mention the city's industrial and business importance throughout the country. In short, the statistics should be reversed, but until such day as some attention is given to betterment of facilities generally, the number of budding pilots will be confined to the brave souls who, in spite of obstacles, persist in their desire to learn to fly.

The course of flight training in Mexico is patterned after the requirements of the CAA in the States and costs around 2,200 pesos for completion. *Cubs* and similar planes rent at 40 pesos per hour, solo. Hangar rental averages 150 pesos per month . . . or about 30 U. S. dollars.

Applicants for learner's permits must undergo a strict physical examination, must present proof of citizenship (a letter from the U. S. Consul, if a citizen of the U. S.), and obtain permission from the Departmento de Communicaciones. The student is not permitted to change instructors during the course without special permission from the Department. After obtaining a license through examination by a qualified inspector, the private pilot must have a minimum of 10 hours solo per year and undergo a physical each six months.

New planes are making their appearance almost daily around Mexico's flying fields. The new Stinson is here, and what a sweet job it does in this altitude! So is the Cessna, both the 120 and 140 and, judging by growing numbers, it is out for first place in popularity. The new Aeronca operates beautifully but the sturdy Piper *Cubs* far and away outnumber all the rest. Some time ago a sizeable number of Fleet trainers were dumped on the local market. Evidently their peculiar characteristics are not suited to this thin air and the local accident rate on this type leads the list. Shortly after the U. S. made surplus planes available, quite a number of Fairchild and Stearman trainers were bought by plane-hungry pilots. These same trainers can be bought for as low as 8,500 pesos (roughly $4,250), which is low indeed for locally bought flying machines!

Probably the outstanding flying news among the private flying fraternity occurred when a daring young Spaniard, Senor Jacobo Fernandez Alverdi, "perforated" (as the local papers put it), the famous Monumento de la Revolucion. Flying a Stearman, with his very best gal aboard, he not once but *twice* dove through the arched columns of this local structure which visiting tourists acclaim "the loveliest gas station ever seen." Actually the arches are only 57 feet wide and about 85 feet high. His first approach was into the West entrance and out the East. His second from North to South. Set as the monument is, in the very heart of the city and edged by buildings on every side, his feat astonished the local stick-and-rudder boys and scared hell out of Sunday afternoon strollers. Even a Ripley of aviation would swear upon close-up inspection that it couldn't be done. His wingtip clearance, by measurement, could not have been more than 7½ feet on each side. And he did it *twice!* Here we blame our foolish actions and our mistakes on the altitude . . . quien sabe?

These are your flying brothers South of the Border. The individual Mexican makes an excellent pilot, as is proved by airline operational records. His timing is good and his sense of direction almost perfect, but then the instruments do help. Mexico is a country which has waited centuries for the coming of the airplane for, through its miracle of overcoming topographical obstacles (more than as a time-saving device), it is making available the wonders of the modern world to the isolated Indian (who may never have seen an automobile, but who rides in an airplane as a matter of course) . . . and it is in turn opening new vistas and opportunities for the visiting pilot to see and enjoy.

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Is Freedom Worth a Nickel?

AN EDITORIAL

IT takes five minutes to write a letter to your Congressman or Senator. It costs five cents for an airmail stamp. Is it worth that much time and money to you if you know that the alternative may be a sudden end to your way of living, an end to freedom and democracy?

This is not a scare headline. It is a fact that every American must face now, if he wants to go on living a democratic life. It doesn't call for hysteria. It calls for the sanest, calmest thinking and the most immediate action in all the years of the republic.

The President has called for re-arming of the nation. Congress has passed the full amount of the European Recovery Plan. Much as it dislikes the idea in an election year, it is moving rapidly towards re-enactment of Selective Service and giving reluctant but serious consideration to Universal Military Training. Over and above all these interim measures, it is united as never before on the supreme importance of airpower. And behind the Congress, public opinion is solidly in favor of the finest and most effective Air Force in the World, no matter what the cost. In Admiral Dewey's words, the people are saying, in effect: "Damn the torpedoes! Full speed ahead." But public opinion is too largely inarticulate. Congressmen and Senators are harassed and overworked human beings, constantly under pressures of many kinds. They need to be reminded from time to time that the people can speak their minds in other ways than through the ballot box, and that they will give support to action in which they believe.

SKYWAYS is once again urging such support for airpower. The Congressional Aviation Policy Board has already moved in dramatic fashion to secure the legislation needed for carrying out the recommendations made in its report on National Air Policy. A month after that report was presented to Congress, Members of the Board simultaneously dropped over 20 bills into the legislative hopper. These bills will be pushed with all possible speed towards enactment in the present session. They vary in importance and urgency, but all form a part of the pattern that will give the United States the greatest degree of security.

Not all the Board's recommendations required legislation. Many of them called for action within the executive departments concerned with aviation, and here the Board has made an even greater contribution to the public interest. From the White House to the smaller independent agencies, the word went down from the Hill that time was of the essence and that there should be no "manana" answers given. Hard and fast deadlines were set and they are being met.

Even in the aviation industry, few people know that certain far-reaching and very concrete results have already been obtained. The first move for real unification came when the Air Transport Command and the Naval Air Transport Service were reorganized into the single Military Air Transport Service. Then, Secretary of Defense Forrestal took the Joint Chiefs of Staff to Key West for a long week-end. On their return to Washington, the Secretary announced that the bitter inter-Service feuds over assignment of responsibilities had been resolved. To the Air Force goes assignment of strategic bombing; to the Navy, primary control of anti-submarine warfare. The Joint Chiefs were ordered to "prepare strategic plans and provide for strategic direction" of Army, Navy and Air Force; to draft "integrated joint plans for military mobilization," and to "establish unified commands in strategic areas when such unified commands are in the interest of national security."

Forrestal had spent nearly a year and a half trying to reach that objective. More than one of the top Brass, still thinking in terms of the "good old days," threatened to "turn in" his soldier or sailor suit rather than yield. The Board's sharp criticism of such disloyalty to the nation gave Forrestal the club he needed—and he used it!

The Bureau of the Budget's unrealistic slash of aircraft procurement is being rectified in the 1949 fiscal appropriation through an increase of $725,000,000 in additional orders. This represents an approximate 75 per cent increase in contract authorization over the original figure—about 15,000,000 new airframe pounds. Authorization for long-range procurement is part of the legislation introduced. On the civilian side, the other "miracle" was attainment of agreement by *all* aviation components (military included) as to the most desirable system of all-weather air traffic control aids under the Radio Technical Committee for Aeronautics SC31 Project. Financial health for the airlines, as well as ability to handle emergency military operations on an immense scale will result. The Congressional Aviation Policy Board deserves the thanks of the American people.

How about that five minutes to write your Congressman that you want to see those 20-odd bills passed in this session? And write today!—J. FRED HENRY